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DNA PROFILINF & PRIVACY

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Nearly *fifteen* years after the conceptualization of the maintenance of a DNA database for the purpose of criminal forensic investigation, the Law Commission submitted the final version of the awaited Bill – officially termed the *DNA-Based Technology (Use and Regulation) Bill, 2018.*Though DNA profiling instills a plethora of privacy concerns, its enormous potential to strengthen the justice delivery system of India can neither be overlooked nor debilitated. Various countries like the United States of America have set successful precedents of combating privacy concerns of DNA profiling by efficient anti-violation security measures .The article envisages a two-fold examination into-

1. The legality of the maintenance of a DNA database in the context of the widened connotation of "Privacy" post *Puttuswamy v.UOI*[1].
2. The safeguards in the Bill of 2018 against privacy violations in comparison with established examples of other nation states.

Constitutional validity of DNA tests

DNA in forensic investigation

Although DNA Profiling is an unimplemented investigative technique, procurement of DNA samples with no provision for retention of the sample or the information thereof is found to be permissible analogous to the term 'medical examination' under Sec 53 of the Cr.P.C[2] .The Amendment Act of 2005[3] added 53 A which lays down provisions exclusively for medical examination on persons accused of rape and attempted rape .Contrastingly, Sec 54 of Cr.P.C. allows a submission to medical examination at the insistence of arrestees on charge.

While determining the scope of the term 'medical examination' the Hon'ble Supreme Court [4] determined that an unbound connotation to the term would not serve justice and would *pro tanto* violate the Fundamental Right against self incrimination. [5] The Apex court while marking forcible administration of Narco – Analysis ,Polygraph tests and BEAP tests as unconstitutional justified forcible collection of DNA samples under Sec 53 of Cr.P.C. The demarcation in favor of DNA sampling is the non-testimonial nature of the sample. For instance , a confession to a crime extracted from a subject under the influence of narcotics simply cannot stand on the same footing as a DNA sample extracted from the subject since the former in isolation can point toward the guilt of the subject .However, a DNA sample extracted from the subject has to be identified by *comparison* against another sample retrieved from a crime scene or other scenes of interest to constitute a *circumstantial evidence* in the

[1] Puttuswamy v.UOI, AIR 2017 SC 4161.

[2] Sec 53 , The Code of Criminal Procedure Act, Act No .2 of 1974.
[3] The Code of Criminal Procedure (Amendment) Act, Act No.25 of 2005.
[4] Selvi v State of Karnataka, (2010) 7 SCC 263.
[5] *Ibid.*

chain of events, hence the non -testimonial character.

Effectively, *Selvi v State of Karnataka* [6] establishes two things-

a) The term 'medical examination' under Sec 53 of Cr.P.C includes forcible collection of DNA samples for the conduction of DNA tests.
b) These tests, even when performed forcibly, do not constitute a violation of Art 20(3) or Art 21 of the Constitution of India.

DNA in Paternity suits

Another area of litigation where DNA sampling raises issues are paternity and guardianship suits. A lot of speculation surrounded the power of the court to order a DNA /Blood test contrary to the volition of the parties and whether it would tantamount to a violation of Art 21 of the constitution. The Supreme Court [7] of India, while deciding whether compulsory medical examinations can ensue from a divorce proceeding, held that the Matrimonial Court can order a medical test to determine paternity even in the absence of a special authorizing legislation provided that a strong prima facie case is shown by the applicant. Traditionally blood test to determine paternity was shunned on the theory that establishment of paternity by exercising the legal presumption u/s112 [8]of the evidence act is more in the spirit of the best interests of the child[9]. This position is seemingly altered in the last decade where the utility of scientific measures to determine the paternity of any child finds favor over the legal presumptions or inference or a long and acrimonious trial [10] ,all the while the paramount consideration being the child's welfare.

Working of the DNA Profile

A specific DNA pattern ,called a profile ,is obtained from a bodily sample or an individual. The *DNA-Based Technology (Use and Regulation) Bill, 2018* envisages that the profile thus obtained is stored in a database under relevant classifications (with provisions for anonymity under certain classifications).This is purported to be helpful in criminal investigations to identify offenders, victims etc and in disaster management to identify victims.

Need for a special legislation

The existing legal system is accommodative of DNA sampling .What new objective does the Bill satisfy?

It is pertinent to note that while DNA sampling under Sec 53 of Cr.P.C does not propose a system for retention of information collected from tests, DNA profiling requires the storage of information in a database for future references, predominantly identification. As such the legal framework in India is devoid of legislations that enable and regulate retention of sensitive data such as the DNA pattern of an individual. Since dangers of misuse and unauthorized breaches could potentially follow, it is a reasonable

[6] *Id.*
[7] Sharda v. Dharampal ,AIR 2003 SC 3450.
[8] Sec 112, The Indian Evidence Act, Act No.1 of 1872.
[9] Gowtham Kundu v. State of West Bengal, 1993 AIR 2295.
[10] Rohit Shekhar v. Narayan Dutt Tiwari and Ors., AIR 2012 Delhi 151.

precaution that binding regulatory measures are in place to foreclose privacy violation.

There is a consensus amongst various international conventions that any "public interest" measure that oversteps into the privacy of an individual must be supported by a clear and precise legislation that authorizes the same. For instance, the Right to Privacy and Dignity under Article 11 of the American Convention on Human Rights[11], prohibits an illegal attack against honor and reputation, and imposes on the States the obligation to provide protection against such attacks. *Owing to the inherent danger of abuse in any monitoring system, this measure must be based on especially precise legislation with clear, detailed rules.* [12] Similarly the ECHR while examining an application claiming violation of Art. 8 of the Convention [13] alleging unrestricted interception of all telephone communications by the security services *without prior judicial authorization, under the prevailing national law* observed that the Russian law did not meet the "*quality of law*" requirement.[14]

The most prominent reason to enact a special legislation is to ensure procedural safeguards for the collection, storage etc and to limit access to the available information. But the *DNA-Based Technology (Use and Regulation) Bill, 2018* does not propose a clear stratagem to combat privacy concerns. It is understandable that a technology neutral law as opposed to a technology specific law is preferable to ensure flexibility of a legal regime, but the Draft adopts a position that neutralizes the basic objective of ensuring a special governing legislation (i.e) precision as to the allowable extent of transgression into privacy of an individual in terms of –

- The extent of information that can be stored .
- The period for which it can be retained.
- The persons and entities that can access the information.
- Security measures employed against unauthorized access.

The Bill for the most part, vests the 'DNA Regulatory Board' with a blanket authority to frame rules that would determine the position adopted with respect to the issues raised above. Though commendable while considering the dynamic nature of technology and notions of what is acceptable to the society, the Draft fails to provide a doubtless guarantee against privacy violation.

For instance, the Law Commission of India in its 271st report on the maintenance of a DNA Profile declared that the database would adopt the United state's style CODIS loci using 13 loci (sequences of DNA at specific locations in a genome). A lot of the DNA in the genome does not give intimate information about a person's behavioral characteristics, physiology or health. Such DNA is known as 'non coding' DNA. The US CODIS uses

[11] American Convention on Human Rights, Nov. 21, 1969, 1144 U.N.T.S. 143, art. 11.

[12] Case of Escher et al. v. Brazil, Inter-American Court of Human Rights, Judgment of July 6, 2009.

[13] Council of Europe, European Convention for the Protection of Human Rights and Fundamental Freedoms, as amended by Protocols Nos. 11 and 14, 4 November 1950, ETS 5, art. 8.

[14] Roman Zakharov v. Russia, European Court of Human Rights, Case no. 47143/06.

the 'non coding' part of the DNA from which it is impossible to glean information that is sensitive to the individual. But the *DNA-Based Technology (Use and Regulation) Bill, 2018* leaves the determination of *the modus operandi* to the DNA regulatory Board.

The "crime scene index" at Sec 2(1)(vii) of the Bill is defined to include "DNA profiles from forensic material found on or within the body of any person, on anything, or at any place, associated with the commission of a specified offence." "Specified offence" is defined as any of a number of more serious crimes, "or any other offence specified in the Schedule [to the Bill]." The Schedule lists various crimes from rape, to defamation, and unnatural offences.

Under sec 33(3) the Bill authorizes several states to maintain separate data bases provided they forward copies to the national database. The national database will include sub-databases, each comprising of genetic information of people/samples classifies under several categories, namely:
(1) Unidentified crime scene samples.
(2) Samples taken from suspects
(3) Samples taken from persons convicted or currently subject to prosecution.
(4) Samples associated with missing persons
(5) Samples taken from unidentified bodies
(6) Samples taken from volunteers
(7) Samples taken for reasons as may be specified by regulations.

The Bill has provisions for deletion of the information acquired during investigations, upon acquittal. This is in line with the 'right to be forgotten'[15], also recognized by the Personal Data Protection Bill, 2018.

Sec 33(6) of the Bill lays down that the identity of a person will be stored only when the information is that of an offender .In all other cases the case reference number of the Investigation associated with the bodily substance will be stored against the profile.

This section provides a reasonable safeguard against privacy by securing that the information under certain classifications will protect anonymity of individuals.

Criticism has been leveled against the sec 33(6) on the ground that it creates a sense of ambiguity and smudges the demarcation between a sample and a profile which causes apprehension because the said Section, as it stands now, could be interpreted to authorize retention of samples[16].

The classification system purported to be established by the Bill is similar to that of The DNA Identification Act ,1994 of the United States as it stands amended by Justice for all Act, 2004.The database under the DNA Identification Act is known as the National DNA Index System (NDIS), and the system for analyzing and communicating data is called Combined DNA Index System(CODIS).The stark similarity in both the acts is the imposition of criminal liability for unauthorized divulgence of information stored in the database with a specified fine amount.

[15] Puttuswamy v UOI, AIR 2017 SC 4161.
[16] Overview and Concerns Regarding the Indian Draft DNA Profiling Act, Council for Responsible Genetics.

Privacy Protection Standards

Access and disclosure

The Bill does not exhaustively prescribe the standards and purposes for which disclosure shall be made /access be granted. This is in sharp contrast with the American system where Sec 14133(b) of the DNA Identification Act authoritatively prescribes privacy standards.DNA tests performed for law enforcement agency may be disclosed only –

- To criminal justice agencies for law enforcement identification purposes.
- In judicial proceedings ,if otherwise admissible, pursuant to applicable statutes and rules.
- For criminal defense purposes, to defendants who shall have access to samples and analyses performed in connection with a case where such defendant is charged.

Additionally with adequate precautions of anonymity the data may be sent for census and research. On the contrary, in India, the Bill vests the Board with a blanket authority to determine such access to information at Sec 13(1).Though it is inevitable that the DNA Board should be vested with the responsibility of developing rules to protect privacy, the evasive provisions of the Bill leaves us with no clue of the position adopted by the legislation to the extent of invasion that is considered allowable under the Bill. A greater concern is Sec 41which permits the Data Bank Manager to grant access to the database to any person or class of persons that the Data Bank Manager considers appropriate, without any administrative review or oversight of any kind.

The PACE[17] act of the UK also authorizes the National DNA Board to lay down rules for retention and destruction of DNA Profiles. The secretary of state must publish rules of the National DNA Database Strategy Board and lay a copy of the rules before Parliament. The National DNA Database Strategy Board must make an annual report to the Secretary of State about the exercise of its functions. The Secretary of State must publish the report and lay a copy of the published report before the Parliament. This ensures that there is a check over the exercise of discretion by the DNA Database Strategy Board which is absent from the Indian counterpart. Though Sec 28 of the *DNA-Based Technology (Use and Regulation)* Bill provides for an audit of the Laboratories, the DNA Board is absolved from a similar scrutiny.

Destruction of samples

Though *DNA-Based Technology (Use and Regulation)* Bill provides for destruction of information upon acquittal, there is no provision for a systematic deletion of DNA information collected under other heads after a stipulated period of time. For instance, in U.K there is a legislative mandate that the DNA information has to be deleted within 6 months.[18]The DNA Identification Act 1994 of the United States under Sec 14132(d) is similar to the proposition of *DNA Based Technology (Use and Regulation) Bill,2018* in as much as it mandates the Director to expunge the information stored in the profile upon acquittal or overturn of conviction.

[17] Police and Criminal Investigation Act ,1984.
[18] Protection of Freedoms Act, 2012.

In the landmark S & Marper v UK [19] ,the European Court of Human Rights held that a blanket and indiscriminate retention of DNA information is a violation of Art 8 of the ECHR.[20] The major concern was the retention of information/samples of the arrestees even after their acquittal. Racial biases of law enforcing officers, while making arrests, elevated the problem endangering the privacy of a particular section of the population. Consequently the government of U.K made changes to the DNA retention regime through the Protection of Freedoms Act 2012. Under the new Act, which came into force in October 2013, the DNA and fingerprints of individuals who are arrested or charged but not convicted of an offence could now be destroyed after a certain length of time. The Biometric Commissioner's 2015 annual report indicated that almost 7,753,000 DNA samples were destroyed even before the Protection of Freedoms Act 2012 came into force, in anticipation of the act. The Protection of Freedoms Act, 2012 requires that any information obtained as a consequence of an unlawful arrest or a mistaken identity should be deleted[21].

It is noteworthy that the retention of DNA samples poses a greater hazard than retention of information contained in a profile. The Nuffield Council on Bioethics' report[22]expressed concern over the possible misuse of the retained samples. For instance, a retained sample maybe used to falsely implicate someone in a crime. It can be used to glean information which lies beyond the scope of mere identification, like familial affinity and genetic susceptibility to certain types of diseases and conditions. While commenting on the reliability of DNA evidence Daubert v. Merrell Dow Pharmaceuticals[23] held that the multiplicity of instances in the handling of the samples creates concerns as to contamination[24] or deliberate misuse.[25]

Monitoring Laboratories

DNA sampling could only be performed by approved laboratories. Sections 14 to 18 provide for the approval by the DNA Profiling Board of DNA laboratories that will process and analyze genetic material for eventual inclusion on the DNA database. Under sec 14, all laboratories must be approved in writing prior to processing or analyzing any genetic

[19] S and Marper v. United Kingdom, [2008] ECHR 1581.

[20] Council of Europe, European Convention for the Protection of Human Rights and Fundamental Freedoms, as amended by Protocols Nos. 11 and 14, 4 November 1950, ETS 5, art. 8.

[21] Sec 63D, Police and Criminal Investigation Act ,1984.

[22] Nuffield Council on Bioethics report, 'Genome Editing and Human Reproduction: Social and ethical issues, 2018, http://nuffieldbioethics.org/wp-content/uploads/Genome-editing-and-human-reproduction-FINAL website.pdf.

[23] Daubert v. Merrell Dow Pharmaceuticals, 509 U.S. 579 (1993).

[24] M. Dawn Herkenham, Retention of Offender DNA Samples Necessary to Ensure and Monitor Quality of Forensic DNA Efforts: Appropriate Safeguards Exist to Protect the DNA Samples from Misuse, 34 J.L. MED. & ETHICS 380, 381 (2006).

[25] Seth Axelrad, Survey of State DNA Database Statutes 2005, AM. Soc. OF LAW, MED. & ETHICS.

material. However, sec15(2), permits DNA laboratories in existence at the time the legislation is enacted to process or analyze DNA samples immediately, without first obtaining approval. There is no definitive prescription of security measures to be adopted by the laboratories. Sec 22of the Bill requires that labs ensure "adequate security" to minimize contamination without providing for accountability in the event of contamination.

Violation of Privacy and misuse

Privacy violations may occur when –

a) The information contained in the profile is illegally authorized or disclosed or sensitive information is derived from the sample.

b) The *retention* of information accrued with respect to an investigation is perceived as unreasonable as the retention of the sample after the completion of the investigation exceeds the object or purpose for which it was collected.

To enable a protection against illegal dissemination of information discussed in (a) the authority that determines access should be limited and should be held accountable. It is unclear as to what will become of the tissue samples, which may harbor all kinds of personal information regarding heredity and disease. Because they contain an individual's entire genome, tissue samples retained by the government threaten privacy interests the most, yet they receive less attention than the computer profiles contained within DNA databases.[26] In the Bill there is no clear mandate about the deletion of samples.

What if DNA profiling in itself violates privacy?

Under the present Sec 53 of Cr.P.C DNA sampling is a valid 'medical examination'.Sec 53, as discussed earlier has been held constitutional. But considering a situation where 'X' is arrested on charge of attempt to theft and his DNA is obtained , Sec 53 allows for a comparison of the DNA retrieved from the scene of theft. Now, if the same sample retrieved form 'X' is used to connect 'X' with a rape offence(even when he is not an arrestee on charge/even a suspect in the rape case) will it be unfair?

People v. Baylor[27] observes that "there is no constitutional violation or infringement ofprivacy when the police in one case use a DNA profile, which was lawfully obtained in connection with another case. Similarly, in State v. Hauge[28], notes that "a number of jurisdictions have held that once a blood sample and DNA profile is lawfully procured from a defendant, no privacy interest persists in either the sample or the profile. While initial DNA sampling and analysis taken from defendant constituted a search, the reuse of this validly obtained DNA sample in a subsequent unrelated criminal investigation did not trigger privacy issues[29]. An excerpt from Wilson v.State [30] reads -"Once an individual's fingerprints and/or his blood sample for DNA testing are in lawful police possession, that individual is no more immune from

[26] Elizabeth E. Joh, Reclaiming Abandoned DNA: The Fourth Amendment and Genetic Privacy, 100 Nw. U. L. Rev. 857 (2006).

[27] 118 Cal. Rptr. 2d 518, 521 (Ct. App. 2002).
[28] 79 P.3d 131, 144 (Haw. 2003).
[29] Patterson v. State, 742 N.E.2d 4, 11 (Ind. Ct. App. 2000).
[30] 752 A.2d 1250, 1272 (Md. Ct. Spec. App. 1999).

being caught by the DNA sample he leaves on the body of his rape victim than he is from being caught by the fingerprint he leaves on the window of the burglarized house or the steering wheel of the stolen car.

In Maryland v King[31] it was reaffirmed that though finding potential matches with help of DNA profile constitutes a search, there is no violation of privacy. Finding that the 'special needs case' test needn't be applied to determine that the search is valid, the Court iterated that there was no reasonable expectation of privacy over the DNA samples of the arrestees.

On the other hand in S&Marper v The United Kingdom[32] it was observed that Art 8 of the ECHR provides for the right to privacy. Everyone has the right to respect for his private and family life, his home and his correspondence. There shall be no interference by a public authority with the exercise of this right except such

1) As is in *accordance with the law* and
2) Necessary in a *democratic society* in the interest of national security public safety or the economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights and freedoms of others.

The proposed DNA profile cannot be regarded as a necessity in a democratic society so as to avail the prevention of disorder or crime. In other words S& Marper [33] rejecting that the maintenance of a DNA profile is *not* unreasonable held-

"Given the nature and the amount of personal information contained in cellular samples, their retention per se must be regarded as interfering with the right to respect for the private lives of the individuals concerned. That only a limited part of this information is actually extracted or used by the authorities throughDNA profiling and that no immediate detriment is caused in a particular case does not change this conclusion... The DNA profiles' capacity to provide a means of identifying genetic relationships between individuals... is in itself sufficient to conclude that their retention interferes with the right to the private life of the individuals concerned... The possibility the DNA profiles create for inferences to be drawn as to ethnic origin makes their retention all the more sensitive and susceptible of affecting the right to private life."

The reasonable expectation of Privacy test

In *Katz v. United States*[34], Justice Harlan articulated the "reasonable expectation of privacy" test that provides our modem analytic framework." Privacy is threatened only if the person claiming an illegal search exhibits both

1) An actual expectation of privacy and
2) One that "society is prepared to recognize as reasonable."

The ultimate question is to determine if the maintenance of a DNA

[31] 569 U.S. 435 (2013).
[32] *Supra* note 20.
[33] *Ibid.*
[34] Katz v. United States, 389 U.S. 347, **361** (1967).

profile is acceptable to the people as a reasonable measure in a democratic society. There is no doubt that the maintenance of a DNA profile could create a *panopticon*, effecting deterrence .It can aid in closing cases and thereby weeding out deviants from the mainstream society. There are many cases where DNA profiling resulted in overture of wrongful convictions. For instance the first DNA exoneration from wrongful conviction occurred in 1989.Till date there are 362 DNA exonerees. 'Innocence Project' is an initiative to exonerate those falsely convicted, enabling them to be a part of mainstream society once again. A study carried out by the project revealed that 70% of the wrongful convictions involved eyewitness misidentification, 28% involved false confession.[35]

Greater reliability and post conviction DNA analysis contribute buttress to the argument that maintenance of DNA profile will strengthen the values of the criminal justice system. It can be argued that any evolved society expects the government to take measures against crime and to punish deviants to create deterrence, reformation and in some cases retribution. As social theorist David Garland observes, surveillance technologies are an essential part of modem societies that require some means of data gathering.[36]

The current structure of DNA Profiling can be favored in the perspective that in case of convicts the privacy expectation is even more diminished. Holding that drawing blood for DNA analysis was analogous to taking a fingerprint (a minimal intrusion) the court held that under the reasonableness theory, constitutionality would be determined by balancing the degree to which the database would advance the public interest against the severity of the resulting interference with individual liberty. Relying on the initial *Rise v. Oregon* decision, an eleven-judge panel in the Ninth Circuit recently announced a holding in *Kincade* that noticeably broadens the population subjected to DNA testing. Furthermore, *Kincade* increases the circumstances in which DNA testing may be used, and in the case of a federal parolee, the *Kincade* Court concluded that despite the alarmist tone of outraged opponents, the interests furthered by the federal DNA Act are undeniably compelling: In light of conditional releasees' substantially diminished expectations of privacy, the minimal intrusion occasion by blood sampling, and the overwhelming societal interests so clearly furthered by the collection of DNA information from convicted offenders, we must conclude that compulsory DNA profiling of qualified federal offenders is reasonable under the totality of the circumstances.[37]

Similarly in *UnitedStates v. Weikert* the First Circuit relied heavily upon the clarity provided by the Supreme Court in *California v. Samson* [38] to conclude that governmental interests outweigh a parolee's privacy expectation.[39]

It is accentuated once again that the storage of DNA information under categories other than pertaining to convicts is protected by anonymity clauses.

[35] https://www.innocenceproject.org/
[36] David Garland, *Panopticon Days: Surveillance and Society*, 20 CRIM. JUST. MATTERS 3(1995).
[37] United states v Kincade,379 F.3d at **831,** 837, 839.
[38] 547 U.S. 843(2006)
[39]United states v Weikert, **504** F.3d at 8-11.

Potential Misuse

The possible misuse can be categorized under two heads

1) *Unauthorized disclosure or access* : Can be avoided by security measures and accountability .
2) *Authorized disclosure or access* : Arbitrary discrimination and stereotyping , Privacy over sensitive information is threatened, retention of information is antithetical to the right to be forgotten.

Under the Bill the Board has the authority to determine access and there is no legislative check limiting access. There is no prescription as to the purposes for which disclosures can be made. For instance if the information from the coded part of the DNA sample (like health /susceptibility to genetic conditions) is stored in the profile and if such information is disclosed to potential employers the right of the subject is affected. For example in the early 1970s, several states in the U.S, enacted laws to identify carriers of sickle cell anemia and to warn against the propagation of children that could potentially carry the gene. Because African Americans were the primary carriers of the gene, 'genetic discrimination' quickly turned into racial discrimination**.** [40] Genetic profiling, or **DNA** profiling, is also being utilized in some workplaces to discriminate against those employees whose profiles[41]could pose potential financial risk to their employers.

This kind of discrimination may even occur within the law enforcing agency. A notable example occurred in Ann Arbor, during an investigation of a serial rapist described by one of the victims as a six-foot tall "light-skinned black man." Black men living in Ann Arbor, who did not appear to be linked to the rapes through any evidence, were asked to supply blood samples for DNA analysis. If they refused, police obtained a warrant to seize a sample. The police defended this "dragnet" procedure as necessary, because there was no other evidence from which to identify a suspect. Even after an individual was arrested, tried, and convicted of the rapes, the Michigan State Police insisted on retaining the blood samples taken from hundreds of innocent black men.[42] All the data available in the Profile may one day be used to identify and segregate those who possess a "crime gene." The possibility of finding genetic causes for antisocial behavior is the most widely publicized research of "behavioral genetics."" To explore that connection, the National Institutes of Health in **1992** funded a controversial conference to discuss the genetic basis of criminal behavior. [43] The safeguard against the violation of privacy with respect to sensitive content is that the Law Commission has issued that the DNA information will be gleaned by the Short Tandem Repeat technology tapping only the non- coding part of DNA also termed as

[40]Warren E. Leary, *Screening of All Newborns Urged for Sickle-Cell Disease,* N.Y. TINEs, Apr. 28, 1993, at ClI

[41] J. Clay Jr. Smith, The Precarious Implications of DNA Profiling, 55 U. Pitt. L. Rev. 865 (1994)

[42] Thomas F. Wieder, Privacy Protection Is Needed for DNA, 2002 L. Rev. M.S.U.-D.C.L. 927 (2002)

[43] Dorothy Nelkin, *Behavioral Genetics and Dismantling the Welfare State, in* BEHAVIORAL GENETICS: THE CLASH OF CULTURE AND BIOLOGY 156, 158 (Ronald A. Carson & Mark A. Rothstein eds., 1999).

'junk DNA.'Sensitive information such as the genetic makeup eludes STR analysis and therefore the information that may lead to stereotyping or discrimination will not be stored in the DNA profile. However despite the Law Commission's assurance the Bill doesn't provide any prohibition of other types of analysis.

One of the major concerns is the development in technology that might, one day, enable the government to retrieve sensitive information from 'junk DNA', should the government be interested in gleaning information from **DNA** samples other than matching profiles to crime scene samples.[44]

While answering these concerns the United States courts have leaned towards the theory that future possibility of violation cannot be taken as a consideration while evaluating the reasonability of an intrusive measure taken in public interest. In Weikert's[45] regarding the contention that the *retention* of DNA profile exceeds constitutional bounds-the court interpreted it as invoking two distinct concerns:

(1) The potential for misuse of information; and

(2) The possibility that future scientific discoveries will enable the government to obtain infinite personal information.

The court held that the first argument warrants little consideration on a general balancing test and the second fails because it refuses to consider "present circumstances. "[46]

There are many instances where surveillance was allowed despite a looming possibility of future misuse on the grounds that the reasonability should be based on prevalent circumstances . For instance, in United States v. Knotts[47], dismissing respondent's claim that permitting the government to use electronic beeper technology to follow persons across state lines would allow twenty-four hour surveillance of any citizen in the country without judicial knowledge or supervision: "*if such dragnet-type law enforcement practices as respondent envisions should eventuate, occur, there will be time enough then to determine whether different constitutional principles may be applicable"*.[48]

Conclusion

Technological innovation is available to all. Undeniably, it is also a tool in the hands of criminals to avoid detection. Alternatively it has enormous potential to aid investigations. Although the State cannot overstep its legitimate interests, technological innovation in investigative techniques cannot be blatantly disused on grounds of apprehension. DNA sampling has a huge reception in the identification of offenders and victims .The odds of unrelated people sharing genetic markers is as remote as 1 in 113 billion. A DNA sample is

[44] Elizabeth **E.** Joh, *Policing**by** Numbers: Big Data andthe FourthAmendment*, **89** WASH. L. REV. **35, 65** (2014).

[45] Supra 39 United States v. Weikert, 41 Suffolk U. L. Rev. 337(2008).

[46] Noah Ehrenpreis, Constitutional Law – Diminished Expectations of Privacy and the Human Genome: Circuits
Align on Mandatory DNA Profiling of Convicted Felons .

[47] 460 U.S. 276, 283-84 (1983).

[48] United States v. Jones, **132 S.** Ct. 945, 954 (2012).

capable of analysis if there is sufficient quantity and reasonable quality of DNA present in the sample polymerase chain reaction (PCR) based testing is relatively insensitive to degradation [49] . Succinctly, obtaining DNA sample(hair ,saliva etc) may be nonintrusive. Defining private space as being equivalent to 'meat space' is outdated [50] in as much as identity is associated not just with the physical body.

The Right to Privacy must be viewed from the perspective of the innocent [51] The structure of the DNA profile as envisaged under the Bill does not raise any reasonable concern of privacy though the lack of definitive protocol for disclosure and accountability causes alarm.

The maintenance of a DNA profile, with quality requirements, could assure a speedy justice delivery system.

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[49] https://www.alrc.gov.au/publications/44-criminal-proceedings/reliability-dna-evidence.

[50] SIMON A. COLE, SUSPECT IDENTITIES: A HISTORY OF FINGERPRINTING AND CRIMINAL IDENTIFICATION 310 (2001);

[51] Arnold H. Loewy, *The FourthAmendment as a Devicefor Protectingthe Innocent*, **81** MICH. L. REv. **1229, 1229 (1983).**