

THE ROLE OF GENETICS IN CRIMINAL JUSTICE PROCEEDINGS IN INDIA

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INTRODUCTION

The role of genetics in criminal proceedings in Indian context is extensive. Genetics is derived from ancient Greek word “Genesis” which means generative, which in simple terms is known as “origin”. Genetics is the study of variations, inherent and hereditary of the genes as, Genes are the key player in turning out of a person’s personality.

Genetics is used extensively in criminal justice proceedings. Biologically described, a gene is a protein which is arranged in sequence and contains information for the working and making up of the cell which is transferred to child from parents through chromosomes which is called DNA-”Deoxyribonucleic” which contains genetic information inside the people about who they are. Most importantly Legal Genetic is an emerging field which focuses on social, ethical and

legal issues relating to the genetic privacy, the genetic information is handled carefully and not be misused as there are many techniques and ways through which genetic information of a person can be extracted and used.

This gives basic idea about the how the personalities are formed but the personality of a person is not dependent on the genes altogether. As the people interact with Environmental factors which can cause to change the gene or its activity level which affects the traits inherited through the DNA. This Demonstrates that any criminal behaviour is not determined by the family background as due to interaction with the environment the gene's activity level might change cause out undesirable behaviour. Genetics focuses on all the aspects which have cause out a certain behaviour. Genetics are used to identify the criminal by comparing the DNA sample with the evidence found on the crime scene and considering the factors like intent and action.

Through advanced technology forensic scientist experts are able to analyse the biological components of the person and derive out the DNA profile of a person. Example – Fingerprints DNA for connecting with the evidences found on the crime scenes with DNA Profiling, in cases of rape and murder as it requires materials to be tested like blood, semen, saliva, hair, teeth, bone, tissues, cells and feces. The genes interact with environmental factors and change its activity level. For example, it is researched that aggressive and antisocial behaviour in a person results from low activity level of MAOA Gene as it regulates mood, emotions, appetite, sleep etc as it involves in breakdown of neurotransmitter.

The Indian justice system works upon the reform of the criminals, which requires to understand the tendency of the person to act in vicious manner and commit crimes. Conditions like substance abuse, society impression, economic conditions, ineffective implementation of the justice system, virtual games etc leads to antisocial and aggressive behaviour.

RESEARCH PROBLEM

Genetics in the criminal justice proceedings breakdown the efforts in investigation as suspect can be detected through DNA analysis. This research paper addresses the factors responsible for

occurrence of such behaviour, admissibility of genetics in court proceedings and the breach of fundamental rights of the people as the research problem to identify the loopholes and breaking down the misconceptions.

LITERATURE REVIEW

Debra Wilson, Genetics, Crime and Justice, Edward Elgar Publishing, 2015 – This book is all about the involvement and importance of genetics involved in investigating a crime and in initiation of justice. This book has critically analyzed cases and the how involvement of genetics helped in solving the cases and identifying the culprit ,Helena Machado & Rafaela Granja, Forensic Genetics in Governance of Crimes, Springer Nature Singapore,2020- This book attempts to convey the latest emerging link in the field of genetics and crime. It explores the sociological perspective of the role of genetics in crime.

Pankaj Shrivastava, J.A Lorente, Hirak Ranjan Dash, Handbook of DNA Profiling, Springer Nature Singapore- 2022- This Book contains work related to the field of forensic sciences and its implications in the legal field and how it is used in solving cases related to civil and criminal matters which includes paternity test, investigating through plants and animal remains, matching samples in cases of sexual offences and collecting samples in cases of murder.

Kshitij Kumar Singh, Biotechnology and Intellectual Property Rights, springer India ,2016- This book links to the social implication in laws of intellectual property rights and the intervention of practices related to biotechnology.

RESEARCH QUESTIONS

What is the role of Genetics in understanding the tendency of the people to commit any crime and view of Law in the proceedings with regard to that tendency?

How there is breach of Fundamental rights through DNA technology and when it is necessary to test someone through DNA technology?

Are analysis results of the DNA Technology authentic enough to be admissible in the court and if they are why they are not admissible currently?

REASEARCH OBJECTIVE

The role of Genetics in understanding the tendency of the people to commit any crime and view of Law in the proceedings with regard to that tendency.

Breach of Fundamental rights through DNA technology and when it is necessary to test someone through DNA technology?

The problem with analysis results of the DNA Technology authentic enough to be admissible in the court and if they are why they are not admissible currently.



Image

Source:

<https://www.linkedin.com/pulse/role-forensics-criminal-justice-system-pillar-modern-nisarg-rathod-fzs2f/>

RESEARCH METHODOLOGY

This research paper is analytic and descriptive. This research paper focuses on Doctrinal part of study which focuses on the legal part of the topic with primary resources of statutes and secondary sources available of articles, journals, books and other resources which are relevant to the topic.

SCOPE & LIMITATION

The Scope of Genetics is prevalent and is evolving day -by- day. As the concept of Genetics is gaining popularity and studies are conducted to know more about it and invent new technologies for its better interpretation.

In criminal investigation collecting samples as DNA evidence is prevailing in the cases of investigation of Rapes, murders, crime scene investigation, paternity disputes, fingerprint testing etc. These samples are used to prove innocence of the accused and cross-check the profile of the victim and other parties involved.

The limitation of the study which affects the outcome of the result is lack of expertise and infrastructure, when anyone's DNA sample is taken it is imperative to store the sample adequately as the biological matter can be destroyed through components like sunlight, heat, water, temperature or any other condition within a limited period of time due to negligence of the conduct to collect and store samples which require trained staff which is not adequate. Either the resource is negligent or not trained enough for the job which is responsible for the improper results and data and there is accessibility problem due to ethic of privacy of data of the genetic information from database of the genetic information.

HISTORICAL BACKGROUND

Lombroso¹ was the first criminologist who interlinked crimes and hereditary and viewed that criminal behaviour of the offender is caused by the hereditary of criminal. The historical

¹ Cesare Lombroso was Italian eugenicist, criminologist and the founder of modern criminology who stated out theory of crime and stated the concept of born criminal.

evolution of Genetics was merely a theory which was attempted Gregor Mendel² in mid-19s which led to creation of new field which came to known as Scientific Genetics which focuses on how traits and genes are passed down from generation to generation. The genes are presented in form of DNA in our body in white cells of the blood which can be extracted. DNA testing for finger prints was introduced in UK by Sir Alec Jeffery³ who quoted that “The people who tend to see DNA as a powerful tool for the prosecution, but don’t realize it’s just as powerful for the defense.” dating back to year 1986, in University of Leicester to verify the suspect’s confession in case to raper-murders, which proved that suspect did not commit the crime. The first person to be convicted using the DNA Technology was Colin Pitchfork who was accused rape-murdered in Leicester. During late 1900s the the use of genetics was initiated in the Indian territory merely for the purpose of Paternity dispute. The starting of the DNA test in India was firstly conducted at Centre for Cellular Molecular Biology, later Centre for DNA Fingerprinting and Diagnostics was established for DNA testing especially for DNA testing for the purposes of criminal and civil court cases.

LEGAL FRAMEWORK

The use of genetics in court may be presented in way that the legal personnel presenting the client in court establishes the fact that the outcome of such behaviour was due to hereditary factors it can be taken into account of the points for interpretation in court but the court varies many factors. In current scenario there is no specific law for Genetics in Indian laws but there are some guidelines and some acts which gives support to DNA technology. Till now genetic technology is used for solving paternity disputes, identification of genetic traits of a person. In investigation DNA analysis is used for deriving connection between the evidences and the crime scene for example when a person touches a weapon the skill cells of the person is left behind and from the sample of the skin cells, DNA is extracted and DNA profile is matched from the database of the genetic information and suspects with possible matches are found with the closest

² Gregor Mendel was Austrian-Czech Biologist, Meteorologist, Mathematician and is considered as Father of Genetics who discovered the Inhererent of the genes and Principle of Genetics which were known as Mendel’s law of inheritance.

³ Sir Alec Jeffery was American geneticist who developed the techniques for Genetic Fingerprinting and DNA Profiling.

match and most commonly Genetics is marking its way in paternity issues with its use in Family law and insurance law.

In 2005 amendment act⁴ brought few changes in the CRPC law which added the provision of getting support of medical practitioner to collect DNA samples in good faith. The take of supreme court in the use DNA Technology is that the supreme court says that DNA test or any other genetic test may be allowed in rare and exceptional case of deserving nature to resolve controversies. But with Pros of comes with cons also, with the help of DNA technology comes with intrusion to basic fundamental right like against self-incrimination, there is limitation to the scope of providing knowledge against oneself in the case of state of Bombay vs. Kathi⁵ which helped in determining the scope of incrimination which DNA technology can cause to a person, and discrimination based on genetic data and right against Privacy of the person and it is justified in the justice Puttaswamy case that right it privacy is an integral part of fundamental right of right to freedom and liberty⁶ and in case of ND Tiwari to protect the dignity of the individual the genetic information is concealed in a seal cover and not to be disclosed publicly⁷.

In 2019 MR. Harsh Vardhan⁸ on 8 July introduced DNA Technology bill in Lok Sabha which is known as DNA Profiling Bill which introduced the use and application of the DNA Profiling, this bill tries establish a framework for regulatory authorities of the DNA information and its usage by maintaining a database with genetic information of the suspects and offenders to keep the privacy of the genetic data of the people. The supreme court of India stated in one of the cases that DNA Technology can be used to generate evidence on the ground of public interest with limitations and on this basis various cases were decided and court marked DNA technology as evidence⁹. This Bill also provided that the DNA information of the person stored can be eliminated on the written request of the person, there is punishment up-to term of 3 years for disclosure of the genetic information of the person without consent.

⁴ In CRPC. Amendment Act 2005 added 2 provisions allowed DNA samples from suspects body with assistance of the medical practitioner.

⁵ State of Bombay vs. Kathi Kalu oghad 1962(3) SCR 10

⁶ Justice K.S.Puttaswamy(Retd.) and Anr.vs. Union of India Writ (Civil)Petition no.494 of 2012,(2017) 10 SCC 1

⁷ Rohit shekhar vs.Narayan Dutt Tiwari and anr.(2012) 12 SCC 554

⁸ Mr.Harsh Vardhan, the Minister for Science and Technology

⁹ Goving singh vs.State of Madhya Pradesh AIR 1975 SC 1378, 1975 2 SCC 148

COMPARITIVE ANALYSIS

Genetic ruled out that 49 % of the psychopathic traits are inherited and the remaining 51% of the variance was due to non shared environmental factors¹⁰ (Waldman & Rhee, 2006).The use of genetics through DNA Technology utilized in approximately 60 countries. In 2012 Czech Republic enforced Special Healthcare Acts for the modern and impactful DNA Testing. Some countries like Sweden, Australia, Austria, Germany and Portugal adopted specific legislation for genetics. In Israel for purpose of privacy concerns the Govt. passes the Genetic Information Law in 2000 which stated that use of Genetics is not banned but Genetic testing like DNA tests will be done by accredited labs only when there is domestic purpose for which doctor's prescription is there or if court directs so.

In United States of America in 2009 GINA (Genetic Information Non-Discrimination ACT) was passed to protect the people from Genetic Discrimination. DNA as evidences were passed.

The Govt. Of Germany has banned the DNA test without permission of the court due to the privacy issues as anyone can take a swab of saliva and conduct a test for the for Paternity disputes in the view of Destruction of privacy of the people as the genetic information can be misused in any way.

UK has the Criminal Justice and Public order act through which National DNA Database is made in which has the genetic data of the person who was involved in some offences.

¹⁰ Catherine tuvblad and Kevin.M.Beaber,41(5),Journal of Criminal Justice, Genetic and Environmental influences on Antisocial Behaviour, pages 273, pages 273-276



Image

Source:

<https://www.linkedin.com/pulse/national-forensic-infrastructure-enhancement-scheme-nfies-rathod-sdvzf/>

ANALYSIS

The critical analysis of the content makes it evident that with the duration of time Genetics has gained immense popularity and dominant position in every field. In the legal field behavioural genetics is used in every step in the judicial proceedings. DNA being a part of genes and genetics is the study of genes. Till date there is no proper techniques which can obtain correct information about the genes. Genetics studies the genes and it has derived out the fact that 50% of the traits from each parent is passed one which later on reacts with environmental factors and generate out the personality of the people, also it is ruled out that for any tendencies which might lead to criminal behaviour is not associated to the genetic history of parents. When the role of genetics comes into the light of legal field, it can be linked to the soundness of the person displaying any criminal behaviour, the technologies which are used to link crime scenes and evidences, deriving out evidences through samples of biological components of humans and for family matters like paternity disputes surrogacy issues, rape cases. It's true that due to the technological advances

comes with some issues which are addressed in the law not only in India but on the global level as the use of Genetics is used in over 60 countries for resolving issues and most of the countries are on same page in the matter of admissibility of the genetic evidence in the court as proof in some matter. The admissibility is in a deadlock situation as it cannot be utilized everywhere as it is not accurate.

SIGNIFICANCE

The significance of the Role of Genetics in Criminal Justice Proceedings in India is very extensive as it comprises of two vital concepts. As we know that the Genetics is the study of genes and hereditary and at the times where crime rate is increasing rapidly, it is necessary to overview the situation and study the genes which causing criminal behaviour in the people. Genetic factors cause criminal tendencies like Aggression, Impulsivity etc. In above MAOA gene was mentioned which is responsible for aggressive and antisocial behaviour which is generally found in psychopaths, the level of MAOA gene is found through Genetic Molecular Analysis. The overview of different ideologies of the technology, the global view, its uses and issues arising in the field. DNA testing and analysis has emerged as a vital technique in certain matters and used in criminal investigations but its admissibility in court in majority of matters is in a deadlock situation due to the loopholes of the generated results for the investigations of the offences. In contrast to the older times with the help of DNA technology it has made it easier to dissolve matters in case of some provisions.

CONCLUSION

It can be concluded that Genetics has become an integral part of the criminal justice proceedings in certain issues and are generated as evidences in the cases of Paternity disputes, sexual offences as samples of DNA match. But the test which are indirectly related to Genetics like narco analysis and brain mapping. History of evolution of the genetics started from mid-1800s when genes were discovered and with time their usage was discovered and so the techniques to verify the DNA samples and its use in the Legal field.

The Indian criminal justice proceedings have adopted genetics which involves collection of samples of DNA as Gene is comprised of DNA which is used in investigation of the offence, prosecution and as evidence in matters of sexual offences, insurances and paternity issues which comes under Forensic sciences in the Indian Legal System. With its pros are coming cons which involves the issues like violation of Fundamental rights like Article 14 which can lead to Discrimination of the basis of Genetic data and can intrude in the privacy of the person and violation of law of right against Self-Incrimination. To avoid these issues arising out due the increase use of the technology the Government of India has led out few bills and regulations but not a specified law for protecting the interest of the people. The evidence which is obtained from the DNA technology is not accurate enough due to which it is puts the admissibility of the court is in deadlock situation as it cannot be considered as legit evidence for the judgement in every case so the DNA evidence is there considerable in court in certain offences.

SUGGESTION

There should be specific laws regarding the Genetics and the DNA Technology

That all people involved in the crime investigation, and prosecution should be trained Properly to handle the Genetic evidence and have basic information other than Forensic teams, so if case of emergency if needed the samples can be extracted before them being destroyed.