

**ANTISOCIAL BEHAVIOUR AND GENETICS:
FUTURE IMPLICATIONS TO CONTROL THE MENACE**

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Abstract:-

Criminality is a trait for the criminal; it is never an option. From the early findings of Lombroso to the development made in furtherance to Human Genome Project and other intensive research on this particular subject suggests that our DNA contains the characteristics which can identify a possible criminal and his antisocial behaviors. Recent case studies on this topic, like the Netherland family case where for the first time the monoamine oxidase A, or MAOA genetic errors were ascertained and in Italy, the punishment of a defendant got commuted on the grounds that he had genetic predisposition to crimes, due to MAOA deficiency, leads us to a question whether our criminal justice system is ready to accept this new theory of tracing the criminal behavior? Unlike CODIS in USA, India does not have a DNA database system; neither they have a proper legislation for DNA profiling. The Introduction of a National DNA index system, the enactment of DNA Profiling Bill 2007, in deciding criminal cases, factors just like Mens Rea and Actus Rea, considering of biological factors, implementation of genetic propensities card, Rehabilitation process for those who are genetically ill would be a few suggestions for administering this problem and can be a vision for a better future.

Key words: - Human Genome Project, Monoamine Oxidase A, CODIS, DNA Profiling Bill 2007, Genetic Propensities Card, Rehabilitation Process

INTRODUCTION

Every day we come across some terrible inhuman incidents through newspapers, media channels or internet like murder, rape, robbery, etc. We often wonder how one can commit such heinous crime and live their life normally while mere listening about the incidents makes us uncomfortable for days. This question might have the answer that these people who commit an offence are different from us. They might not be mentally and physically normal and similar with the non criminals and sometimes they might enjoy giving pain to people. This answer can be admitted on the basis of the theory which has its inception long back in 1800 given by Lombroso who stated that all criminals had the same distinctive features such as enormous jaws, huge eye sockets, and handle-shaped ears. He believed that these features were to be found in "criminals, savages, and apes". Incidents in 21st century make us open the old books of theories and rethink whether Lombroso was correct in his findings or it was a mere observation made by him.

The brutal case of "Nirbhaya" compels us to think is it possible for a common man to kill a person so heinously. The accused did not even had a guilt conscious and not for a single time felt petty for the girl. The mechanism of their mind works in such a fashion that for them it is easy to impart criminal activity. This kind of approach is hard to be developed from the surroundings as the general theories of crime suggests about the development of a criminal. The whole scenario projects that the mental set up of these criminals are different and tend towards aggressive activities which are developed by the genes inherited in them. It can be a case that they are born criminals with the distorted, crime intending genes embedded within them.

It is very hard to believe that a criminal can be a born criminal. The criminality of his acts lies within his genes which he carries from his ancestors. According to Francis Galton, talent, character, intellect, disposition, and other aspects of "natural ability," as well as physical features, such as height and eye color, is governed by heredity. Similarly, a tendency to vice, alcoholism, feeble-mindedness, and criminality are inherited.¹ This brings in the concept of eugenics given by Galton, which is the application of laws of genetics to the improvement of the human race. It detects the nature and the traits of the genes and defines the characteristics of an individual. For example: the presence of XYY chromosome make up rather than XY. This extra Y chromosome gives the males a different characteristic which includes a strong intention or compulsion within them to commit crime and go against the rules.

Inspired by such theories and the increasing rate of such type of crimes which are hard to realize, this paper tends to discuss about the chances of an individual of being a born criminal or about the potential criminals. This paper will be in Indian perspective and will try to also suggest some remedies to deal with such occurrences. Some countries like U.S. have already detected this problem in the society and have come up with remedies by establishing agencies like CODIS, and amending laws in such a manner that they have started admitting the DNA based evidences in the court of law.

The landmark development which influenced or made it practically possible to have information about a person's genetic makeup is the Human Genome Project (HGP). It was

¹ <http://www.scienceclarified.com/dispute/Vol-1/Are-XYY-males-more-prone-to-aggressive-behavior-than-XY-males.html#ixzz3Bo9JTMZ8>

the first internationally collaborated research initiative to determine the nucleotide sequence of the human genes. The objective of the project was to create a sequential library of DNA, for representative samples of human gene. This library will help in detection of specific mutations which can cause a distinct disorder or disease. Once a disease or disorder is detected remedy for such can be provided and precautionary measures can be taken. Hence, the disorder and the diseases can be treated and eradicated.² The HGP research has found probable 30,000 human genes. This set of findings has provided us with the information regarding structure, function, and organization of human genotype as well as other functional elements found in DNA. This project will implement with basic information about the inherited traits found in a human being, in near future.³ In furtherance to this project, Genetic science has emerged a lot and a large development has been made in assessing antisocial behavior of a person specially to those who is having a genetic disorder.

There are three ways of defining antisocial behavior. The first approach talks about criminality and delinquency. Criminality is a deciding trait in activities that result in criminal prosecution or incarceration, while delinquency is defined as indulging in unlawful activities while under the age of 18.

The second approach is used to diagnose different criteria's for various personality disorders that are associated with an increased risk of criminal activity. Antisocial Personality Disorder (ASPD) is characterized on basis of a persistent disregard and violation of, the rights of other people. It is diagnosed in those individuals who are above the age of 18. Three childhood disorders - Attention Deficit Hyperactivity Disorder (ADHD), Conduct Disorder (CD) and Oppositional Defiant Disorder (ODD) are also often assessed because they have been identified as risk factors for development of ASPD.

A third approach to antisocial behavior has been disclosed the personal traits that can amount to be one of the risk factors for engaging in criminal behavior. Adult hyperactivity, often appearing as ADHD, may also be of interest because individuals who are having the traits of antisocial and hyperactive behavior are more likely to engage in criminal behavior

These studies suggest that they are more not so concerned on serious crimes against property or person. They are not having significance on criminal activities such as "white collar" crimes. Secondly, the correlation between these disorders and crime is not perfect. It can be said that not all who are diagnosed with ASPD and related disorders will indulge in criminal behavior and not all are convicted criminals, but these behaviors may increase the risk of engaging in criminal behavior. We need to check and stop the probability left with ASPD disordered individual to turn into a criminal. They can be designated as potential criminals. In such situations if the country is provided with the data of its citizens having such deficiencies and disorder, then after the occurrence of a crime it would be easier for the investigating branch to make a list of the probable persons, who can commit such crime. Once such initial list is made than, the criminal history, if any, of the identified probable offender can be checked and looked into the nature of the crime he has committed in the past. In this way the investigating branch can make a top down list and finally find the offender. This process, if incorporated, will faster the rate of solving criminal cases and find the criminal. The detection of the fault of DNA of the criminal will also help to identify to which kind of

² <http://www.ndsu.edu/pubweb/~mcclean/plsc431/students99/ringdahl.htm>

³ <http://www.genome.gov/11511417>

punishment he/she should be subjected. This method will enhance the reformatory system of punishment in India.⁴

FIRST DETECTION OF DISORDER LEADING TO CRIMINAL ACTIVITY:

In 1978, a woman asked for the help of University Hospital in Nijmegen, Netherland. The problem was regarding the abnormality in the behavior of men in her family, which includes her brothers and a son. Gradually, when the woman was counseled by the Geneticists, they came to know about the strange behavior of the male persons in her family. One of them had tried to rape his own sister, another had tried to cause harm to his boss taking the help of a car, third one forced her sister at knife point to undress & strip. Interestingly, this violent streak of men in that family has been following since a long time. Way back in 1962, when the woman's Granduncle suspected about these kinds of activities in his family, he prepared a family tree identifying nine other males with the same sort of characteristics. After 15 years to the woman's first visit to the Geneticists, they had finally figured out that in the woman's family, they suffered from a genetic error on the X chromosome, a defect which cripples an enzyme which help in regulating aggressive behavior. This was the first time a specific gene was linked to aggression. But the problem with this research was, they did not know the nature of these genetic errors itself. So out of hundreds of genes, an enzyme called monoamine oxidase A, or MAOA was of their particular interest, as they found out its job which was to break down three important neurotransmitters, one of which breaks down serotonin & dopamine, which are involved in regulating the mood and it created instability which are often found in patients with psychiatric disorders. If those men were suffering from MAOA defect, then Geneticists figured out that, excess levels of the neurotransmitters would accumulate in their bodies and urine. So it did, they found excess levels of neurotransmitters in their Urine and also they found very low levels of breakdown products which happens only after MAOA has done its work. From here the Geneticists concluded that the MAOA deficiency has been associated with the behavioral abnormalities that were seen in that particular Dutch family.⁵

After the establishment of MAOA deficiency which may lead a person to criminal responsibility, a few of the practical approach has been taken by the Law towards those people who are suffering from it.

ADMITTANCE OF DNA EVIDENCE:

In Italy, a judge reduced the sentence of the defendant by a year as the evidence showed for a genetic predisposition to violence, due to MAOA deficiency. The European journal of Human Genetics, Forzano et al. described the case as followed. "The convicted man [Abdelmalek Bayout] was an adult male affected by schizophrenia who [...] was found guilty at the first level of judgment and was given a reduced sentence (9 years) owing to his mental illness. At the appeal court, a new expert assessment took place, and genetic testing was requested by the defense. [...]The judge, however, reduced the sentence from 9 to 8 years, based on the fact that the accused had tested positive for genetic variants that made him

⁴ <http://www.aic.gov.au/publications/current%20series/tandi/261-280/tandi263.html>

⁵ A Violence in the Blood, By Sarah Richardson | Friday, October 01, 1993, DiscoverMagazine,

particularly prone to be aggressive under stressful circumstances and therefore he was even more vulnerable because of that.”⁶

Further, it was also held in that case, “In particular, carrying the low activity MAOA gene (MAOA-L) could make the subject more prone to express aggression if provoked or socially excluded. It should be stressed that such “genetic vulnerability” turns out to carry even more significant weight in cases in which an individual grew up in a negative domestic social context, and was, especially in the early decades of life, exposed to adverse, psychologically traumatic environmental factors”⁷

In a research on the effect of genes at different stages of criminal behavior based upon the theory derived by Dr. Terri Moffitt⁸, Dr. J.C. Barnes⁹ along with his co writers came up with the analysis of the percentage of criminals getting influenced from the environment and genetic factor. It has been found that the life course offenders are more in percentage and the genetic factors are playing a major role in their pathway compared to that of the adolescent offenders or crime abstainers. ‘Life course offenders’ are the habitual offenders. As they have a particular genetic disorder which leads to repeated commission of offence, it does not harm their morality or conscience. ‘Adolescent offenders’ are those who commit petty offences like alcoholism, drug use, etc. during their adolescence. They do not carry such commissions throughout their life time. ‘Crime Abstainers’ are those who do not indulge themselves in any unnatural or deviant act. As depicted in the graphical representation given by the researchers, it has been concluded by them that “genetic influences in life-course persistent offending were larger than environmental influences. For abstainers, it was roughly an equal split: genetic factors played a large role and so too did the environment. For adolescent-limited offenders, the environment appeared to be most important.”

Barnes concluded that there is no single gene for criminal behavior, and the method for committing a crime is learned. “But there are likely to be hundreds, if not thousands, of genes that each will incrementally increase your likelihood of being involved in a crime even if it only ratchets that probability by one percent, it still is a genetic effect. And it is still important.”¹⁰

INCORPORATION OF DNA TECHNOLOGY:

As now we know that genes define behavioral aspects of a human being, thus the system of study of genes should be incorporated into the field of law for strengthening the criminal justice system in India. The study of neurogenetics suggests that the genes carriers out traits

⁶ Forzano, F., P. Borry, A. Cambon-Thomsen, S.V. Hodgson, A. Tibben, P. De Vries, C. Van El, and M. Cornel. 2010. Italian appeal court: A genetic predisposition to commit murder. *European Journal of Human Genetics* 18(5): 519–521.

⁷ Bayout v. Francesco. 2009, RGAssise App. 6/2008 RGNR 1685/2007, RG. sent 5, (18 September 2009)

⁸ Terri Moffitt, Professor, Duke Psychology and neuroscience Psychiatry and Behavioral Sciences, Duke University of Durham, NC

⁹ Dr. J.C.Barnes, Assistant Professor of Criminology in the school economics, Political and policy sciences at UT Dallas.

¹⁰ Id

of a human being from which we can determine the possible criminal behavior in a person. If such is the findings then this technology or the quality of the gene should be used in detecting or in finding out the criminals hiding behind the veil of the so called modern society like in the cases of rape, which is pertinent in almost all the states of India. It is high time that our judiciary should start admitting the genetic evidences in criminal cases. Unfortunately the draft DNA Profiling Bill 2007 is still pending which is drafted with the objective to enhance protection of people in the society and

Administration of justice¹¹ and bringing the DNA technology in the purview of criminal justice system. The bill gives the process of establishing an authority or a body which will govern the whole system of collecting DNA samples and making the database. This could be the first step which will make the job of finding the criminal, easier. Unlike our country in a developed country like USA, they are having a National Database called CODIS (combined DNA Index System) which is nothing but a national DNA index system. It helps in solving crimes and one of the essential equipment of law enforcement. It is a database which has the genetic and DNA information of the suspects and the criminals of their country. During a criminal investigation like in case of homicide, the investigator performs DNA testing on the forensic evidence found in a crime scene. Then they feeds the results of the DNA profiling of the evidence in the set database and tries to match it with the existing DNA profiles in the index. If similar or same profile already exists, then it shows a positive result and it becomes easier to catch hold of the suspect. Such a Database is a must in our country considering the rate of crimes increasing day by day in our society. Due to lack of any supportive legislation in our country like the DNA Analysis Backlog Elimination Act of 2000 in United States, our hands are tied up so that we can use this DNA Mapping technology.

A STEP TOWARDS FUTURE:

The Criminal Justice system will have a significant impact of these genetic identification, mostly in terms of the philosophical doctrine of determinism which talks about actions which can be determined prior to the causes and explained subsequently. The antithesis of determinism is basically free will power which a man posses and it is the soul factor to determine their own individualistic traits & behavior, while our study suggests that genes alone determine a person's behaviors. The question that is very important in this context is how much determinism is required to prove that genes are the sole determinant or it is interdependent with environmental factors or some other factors may prove to be a questionable matter of interpretation. As far now what we can say is that if at all we implement genetics into our criminal justice system the "character evidence" would differ from the traditional character evidences. Traditional character evidence is transitory as it is furnished with the concept that mental behavior of the people is changeable. On the other hand biological explanation which leads to genetic evidences is presumed not to change. Nevertheless, if genetic evidences are being included, propensity determinism will be affecting our criminal law system especially in the areas of defenses to verdict of a particular case. For example if a prima facie case of voluntariness is proved by the prosecutor for a particular criminal offence then in this genetically focused system, it can be challenged as well as defenses should be available to defendants based on genetics. An accused can always

¹¹ Draft DNA Profiling Bill 2007

claim that his behavior was in furtherance to the DNA deficiencies he is having and accordingly it can amount to his exoneration from criminal liabilities. But the nexus between this genetic development & criminal justice system may offer a pathway for discriminating general people with “genetic minorities”. A criminal “class system” may emerge if we create criminally suspected groups who bears fault in their genetic. Such approach will lead to failure to scrutinize some important factors like Mens Rea and Actus Rea and also other biological factors like the growing up of those individual, cultural influences etc. Under the new system, as the persons will be classified according to their genetic predispositions to violent act, the degree of perniciousness which are evident in that person’s sensitivity, along with the defective genetic behaviors will play an important role in some aspects of law like pre-trials releases, character evidences at a ongoing trial, post trial release and also on the verdict. The auxiliary effect of this new system will be empowering the executives to come up with new strategies of investigation and for the purpose of prevention of crimes based on the propensities of genetically disordered suspects. The executive may ask for a compulsory genetic propensities card for every individual of the state so that they can use it and corresponding information of that card with the DNA database which the officials are already having and stop crimes from being committed. For example if police catches a person and charges him for over speeding the vehicle which he was driving, along with the driver’s license or registration of the vehicle they can ask for the genetic propensities card. Discovering the genetic propensities of an accused will increase the scope of criminal cases and these data can be made available through electronic medium for referencing national wise (DNA database). As our criminal law system of today has changed its approach from retribution to reformation, thus at sentencing, the length of the defendant’s sentence might be affected by quantum of his or her genetic propensities. Rehabilitation would be referred to as the official secondary option towards those individuals whose genes are indicated as they could be mostly influenced by environmental factor. The method of collecting DNA data which will be used for the ongoing trials, for example DNA fingerprinting would still be challenged on statistical grounds, given that these method does not provide an absolute identification even though it is a probable standardized system. However it would not deter the prosecutors or defense attorneys, judges and the public at large to rely on these information as several byproducts might happen. Trials would be more Science oriented, dominated by scientific findings and terminologies which will reduce the chances of delusive evidences and false witnesses. The eyewitness testimony may be considered as less important if the DNA evidences differs or raises a few questions about its accuracy. Moreover the accused can be tested almost immediately to avoid miscarriage of justice. But some eyebrows would be raised if this system will be implemented in our legal system. For example those convictions which would be overturned on the basis of DNA testing, some prosecutors would love to deny that DNA tests are not conclusive enough of proving guilt or innocence of a parson especially since science is still evolving and not everything is of our knowledge. Apart from that some issues of right to privacy and the mandatory use of genetic propensities card and DNA database as well as the debatable “criminal class system” will amount be a burning question.¹²

CONCLUSION:

¹² THE CRIMINAL LAW IMPLICATIONS OF THE HUMAN GENOME PROJECT:REIMAGINING A GENTICALLY ORIENTED CRIMINAL JUSTICE SYSTEM,STEVEN.L.FRIEDLAND,KENTUCKY LAW JOURNAL,VOLUME 86 (1997),PP.303-366

'Innovation is not the result of chance; it is the result of action. It is not a thing to wait; it is a thing to do.'
-Anonyms

The system of law can never be static; it is ever changing and it has to incorporate the development in consonance with the changes and mind set of the society. In 21st century, the development takes us to a farfetched technology of which nobody would have thought before. This paper gives a brief idea of the upcoming DNA technology and how it has evolved and can be utilized in the modern world. The threats and emergence of complexities of human behavior is increasing by leaps and bounds. The knowledge of the root cause i.e. the genetic characteristics can act as a facilitator in combating such situation. The DNA based criminality detection technology is such a technology which takes us a step ahead from the traditional deep rooted systems of law in India. The pendency of cases across the various courts of our country, molding and twisting of facts and false character evidences, false eye witnesses, acquittal of criminals due to lack of strong evidences can be avoided if substantial manifestation and documents are backed up by technological and scientific proves. Certain steps are to be taken for the implementation of the existing better technologies and similar frameworks available with us. The DNA bill will act as pioneer for execution of the Genetic technology and the idea of DNA data collection. The first step which is needed to be taken is to enact the pending DNA bill and establish the data collection authority. Once it is done, India will be equipped with a DNA database which can help in convicting the criminals faster and acquitting the innocent. For example the effectiveness and accuracy of data provided by CODIS helps the USA government in solving cases in faster rate and remove the tradition of piling up of cases for ages. It draws our attention and encourages us to take a step towards the implementation of DNA database in India. Till now there are no specific provisions under the Indian Evidence Act, 1872 or in Code of Criminal Procedure, 1973 which deals with DNA information collection and investigation in furtherance to that. So certain changes are needed to come in these two acts which will enable the criminal justice system to take account of DNA evidences and then work accordingly. Once we have implemented DNA database into our legal system we can take a step further by issuing compulsory genetic propensity card for every individual of the state. It will facilitate the investigating department with more information in a better and easier way. It can be also used to monitor the individual behavior and thus precautionary measures can be taken against criminal activities. The stigma in the minds of the people has to be removed and an advanced thinking and approach is needed to be adopted.