

Ameliorate Rwandan Unlawful Justice through Forensic DNA Proof

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Abstract - At present, the utility of forensic proof has attained eligibility in the field of Unlawful justice. This utility has been applied in various legal systems worldwide; wherein systematic proof such as DNA helps the courts to decide complicated high-tech crime cases. Systematic proof such as DNA is a tool used to ascertain the guilt or innocence of suspect with certainty when proof such as blood, semen have been left at crime scene. It plays a set of role either to punish individual falsely accused or convict those guilty of crimes. DNA's proof is commonly used to resolve Unlawful case in various ways. The first scenario is when the suspect is known and DNA sample collected from him/her is compared from the DNA sample collected from the scene of crime to ascertain the involvement of suspect in commission of crime. The second one is when the suspect is unidentified, but he/she leave the biological proof at the crime scene where these proof can be analyzed and compared with perpetrator's DNA profile from DNA database to demonstrate his/her identity. Furthermore, through the use of DNA profile from database, DNA proof gathered from crime scene when the originator is unknown to be utilized to link other already committed crimes. In these conditions, DNA technology is gradually vital to safeguard correctness and impartiality in crime solving. Its use in Rwandan Unlawful justice system has not yet yielded significant influence on organization of justice. This is due to the fact that in Unlawful justice, forensic science in general and DNA technology in specific are still at newborn stage and have not yet been introduced as subject in any law syllabus; lack of specific DNA legislation is another staggering block wherein DNA proof is considered as circumstantial proof with minor consideration. It is the time wherein all players of justice and all participants should realize that this genetic proof is a powerful and helpful tool for safeguarding prosecution as well as helping to exclude suspects early in investigation and increase prosecution rate, hence giving justice. The enactment with perpetrator's DNA profile from DNA database to establish his/her identity. Furthermore, through the use of DNA profile from database, DNA proof collected from crime sight when the originator is unknown be utilized to tie other already committed crimes. In these circumstances, DNA technology is gradually vital to protect correctness and impartiality in crime resolving.

Keywords: DNA, Systematic Proof¹, Forensic Sciences², Genetic Proof³, Bond of Safekeeping⁴, Unlawful Justice Bond⁵

Introduction

The method of operations of high-tech crime is very complex in the current systematic era. Advances in science and technology applied in real life must be met and controlled with laws, especially in the administration of Unlawful justice. The main determination of every legal system is to protect human life and property and to encourage peace and accord in social life. Therefore, it is vital to improve techniques of crime detection in order to drop crime and consequently preventing breach of the law. Genetic proof such as DNA can be employed in investigation and to establish rate of crime and guilt of perpetrators. Lawful, socioeconomic, political changes and technological advances happening in various countries affect and change the way societies live. The quick growth of science and technology in Information Technology and Forensic Science is likewise leading to the need of reviewing and updating some Rwandan laws. In other words, in order to keep side by side with growths taking place in the world in general, East Africa and Rwanda in particular, Rwandan legal system needs to go hand in hand with such advances by introducing DNA technology as topic in law core curriculum and enacting a specific DNA legislation to accommodate fully the systematic use of DNA proof. Lacking a law on DNA proof makes the same not to be valued or resorted to in the justice system. Deficient of infrastructure such as modern forensic lab is a handicap to appreciate DNA proof in courts. For DNA proof to be allowable in courts it should be handled in a proper way and infrastructure is a vital component. Rwandan legal system needs to conform systematic proof such as DNA and at the same time enact a law governing its use and train all collaborator, it is acknowledged that law must not be motionless but dynamic in its method and must be in accord with the need of the public. DNA's proof has an overriding role in the detection, investigation and Capturing perpetrators furthermore liberate innocent suspects (DNA: A Prosecutor's Practice Notebook). Any proof s, proofs and materials, which directly or indirectly link the accused to crime, should be handled carefully through strict respect of bond of safekeeping protocols so that they are not contaminated, tainted or destroyed (Lazer, 2004).

2. Statement of the Problem

Actors of justice do not fully understand the improvements or the widespread encouraging capability of DNA proof to support the investigation, prosecution and the court to attain at a correct thesaurus. These makes puzzle in administration of justice

regarding rightfulness of DNA proof in Rwanda. The lack of DNA legislation and lack of training among actors of justice are main obstacle to Judicial Police Officers and Prosecutors as they are not sure whether the DNA proof collected will be accepted by the Courts to give proof of their claims. There is need for an integrated tactic by funding training of all actors of justice. Another disturbing issue which needs to be controlled by law is to keep balance between private and public interest. Therefore, the Parliament of Rwanda needs to enact a law that accomplishes/achieves the critical balance between public interest for effective prosecution of offenses and individual interest for protection of civil liberties of the suspect during Unlawful investigation.

3. Material and Methodology

The research methodology used in the present article is strictly doctor ship. The writer has mentioned to systematic and legal literature from books, journals, PhD thesis, national and international reports, and legislation, judicial case in point and electronic sources. The current article is serious analysis which points out issues and challenges related to the use and effectiveness of systematic proof such as DNA in the Rwandan legal system to improve Unlawful justice scheme, wherein the lack of DNA legislation is examined with special emphasis.

4. Definition of Key Concepts

4.1. Meaning of DNA

Deoxyribonucleic acid known as DNA, also called a genetic blueprint due to the fact that it includes all the directives that regulate genetic features of all individuals. In chromosomes of every individual there is a DNA which controls all visible features of individual such as skin color, sex, race, etc. and other perceivable characteristics, In all body cells of an individual DNA is same for example, DNA from blood is same like that from saliva, semen, etc. The science has proved that every individual has unique DNA demur mono zygotic twins. This uniqueness assistance in identification. Yet, modern methods simply permit an analysis of a minor share of the total variation among persons. The structure of DNA is a paired twist like ladder from which two components/strands are twisted around one another (Sharma, 2007). Abhijeet Sharma, from his book, stated that each component/strand of DNA is shaped of a linear arrangement of building blocks termed as nucleotide or bases. It forms a four types of base: Adenine, Thymine, Cytosine and Guanine, characterized by the letters A, T, C and G. The two components/strands are detained together by accurate and joint attraction between the bases. Adenine in only component/strands attracts Thymine in the side of strand, creating an A-T pair, and Cytosine only attracts Guanine, creating a G-C pair. The couples of bases create bonds between the two strands, and are similar to the stairs of a helix stairway (Sharma, 2007). Genetic characteristic get mixed through DNA molecule when there is creation of male sperm cells and female egg cell. Due to this mixing process of genetic characteristics, the DNA in all male sperm cells from single individual or all eggs from single woman is not equitable shares split down the middle. Somewhat, there is 50% chance that every genetic characteristic will be present in any set of egg or sperm. This connotes that limited apparent characteristic are caused by inheritance from only one genetic material. The Greatest visible features/behaviors results from the interaction of various genes (DNA Initiative: DNA for Defense Bar, 2012).

4.2. Meaning of Proof

Proof is any testimonial declaration or physical item from which correct decision can be haggard. It is a wide category covering anything traceable by the five senses of human being including documents, exhibits, facts accepted by two sides and the declaration of witnesses. In Unlawful cases proof or proof goes with the intention, commitment, motivation, utilized means and occasion to commit a crime (Flannery, 1192). Proof is any tangible element or information collected by Judicial Police Officers qualified to be disposed and useful to a case under investigation. The relevancy of that proof is based on the capability of linking the suspect with the victim or with crime scene. The weightiness of proof in Unlawful stuffs, is the capacity to prove that the crime happened and show that the suspect was involved in commission of the suspected crime. Proof such as DNA plays a key role to eliminate suspects among many or free innocent accused mostly with the use of forensic techniques.

5. Physical/Direct and Circumstantial Proof

Normally, proof is grouped into two types: Circumstantial and direct or physical proof even if proof of testimony and documentary are also significant and considerable categories of proof used in court courts-martial.

5.1. Physical or Direct Proof

Direct or physical proof is a proof which is traceable/noticeable and can be perceived detected by any of five human senses. For instance knife, machete, photograph, etc. Direct proof proves or gives proof on the fact in problem without necessary imposing the Judges to create any expectations or to draw contrary interpretations. It is suicidal proof that directly lead to convinced judgment. Typical examples of direct proof are eyewitness testimony, photographs or video recording of the perpetrator during proof are eyewitness testimony, photographs or video recording of the perpetrator during commission of crime or convicting testimony made by the perpetrator, victim, or witness.

5.2. Circumstantial Proof

Separately from direct proof which is based on individual information and provide a final decision, circumstantial proof lies mostly on interpretation and uses inductive thinking and reasoning. Circumstantial proof is proof that secondarily demonstrates a fact or backings an idea or a theory. It indicates that the suspect has been involved in the crime and is usually enough to accuse the suspect whenever the proof and inferences drawn from the proof can be used to prove that the suspect is guilty beyond a reasonable doubt. It is accordingly, the power of forensic scientists to examine the direct proof through systematic methods, to reconstruct the events and establish the occurrence of crime. The Public Prosecution will at that juncture relates information from forensic lab with other testimonies of witnesses and other relevant proof such as communication, telephone taping and bank statement for the purpose of constructing a general concept or theory which establishes the link between committed crime and suspect (Yeshion, 2014).

6. The Effectiveness of DNA Proof as Tool of Forensic Science in Crime Reduction

DNA's proof is one current way of examining and prosecuting Unlawful. DNA's proof has been believed as the best, Correct and effective proof available in the hand of Judiciary to investigate and prosecute crime. It is also used as tool to found the guilty or innocence of an individual. DNA's proof is a powerful tool due to the point that each person has unique DNA; except mono zygotic twins. Then, DNA proof collected from a crime scene can implicate or eliminate a suspect in Unlawful cases. It can analyze unidentified remains through comparisons with DNA from relatives. The influence of DNA is also seen when biological proof s such as blood are collected from crime scene(s) and stored in forensic method. Such proof some time can be found on proof that may be very old. Thus, old cases that people earlier thought cannot be solved, can now be solved through appreciated DNA proof with the ability of establishing the Unlawful (Krimsky & Simoncelli, 2011). DNA's technology is often important factor in prosecuting the guilty and clearing the innocent. Operated tactically, DNA proof can improve prosecution rates, increase rates of clearance, plays the role of prevention, and then play the part in efficient crime reduction. DNA's technology as the latest method of forensic science is the result of great development of genetic science. The value of DNA proof to prosecute a suspect in every case depends on unbroken strong bond of safekeeping from crime scene to court. Mostly; the defense challenges the prosecution based on human procedural fault (People of the State of California v. Orenthal James Simpson, 1994). To increase in the volume of DNA proof, legislation, innovation and funding are vital. Crime reduction strategies and solutions must note that Prosecutors should work together building on one case at a time. Crime Scene Proof Collection Technician, Forensic Analyst etc. are under the obligation that every time they gather, handle, transport, or analyze DNA proof they have to do it in harmony with accepted procedures within approved standard of prosecution. Therefore, all these steps in the process are interconnected and have to be done in the appropriate manner and each step must also be in harmony with the others as united approach. In Rwanda, there is need for an integrated approach to fund training of judicial police officers in appropriate DNA collection, handling and funding of DNA laboratories to perform DNA tests properly. For instance, the US Government developed training materials for actors of justice such as Prosecutors and Police Officer to be acquainted with the effective use of DNA in investigation and prosecution (Parikh et al., 2007).

6.1. Role of DNA Proof in Unlawful Cases

The main purpose of every legal system in Unlawful procedure is attaining a structure that balances both public and private interests. It entails the respect of fundamental human rights of the individual whilst upholding society's legitimate interest in maintaining the peaceful cooperation and co-existence of its citizens. This is true in both civil law and common law jurisdictions. For achieving this goal there must be balance between the rights of the individual and the right of the State to prosecute those who breach the law. For its success, an Unlawful justice system must understand the need of the society it intends to safeguard. The Unlawful system is intended to protect society against what is considered by a particular society as Unlawful or evil. It should be understood that it is impossible to have common law governing the society in general (Blackmore, 2011). DNA test has enormous impact on the administration of Unlawful justice (Chakraborty, R, 1992).

DNA's proof is important:

- 1) To Prosecutors, DNA technology is the tool used to incriminate a perpetrator i.e. prove guilt. It helps to focus their investigations and prosecution in more fruitful directions.
- 2) To Advocates, DNA technology can help free their clients.
- 4) The Judges, DNA technology is the balance or measure on which guilt or innocence is weighed, hence, the critical tool for decision-making.

6.1.1. Identification Purposes

In many heinous crimes, offenders often leave the cadaver by severing the head of the victim on the crime spot, leaving the head-less corpse; very often it becomes difficult to identify a dead body. In such situation DNA test can solve the problem. These types of incidents commonly happen in crowded areas. Sometimes murder may be committed and the dead body is kept hidden in a deep pond for many days, the dead body being non-traceable for many days undergoes decomposition in the water and fishes and other aquatic creatures eat the human flesh resulting in difficulty in identification of the decomposed body. In such situation DNA test can solve the mystery (van Cuijk, 2009). In rape cases, DNA proof proves whether the suspect is guilty or innocent. Immediately after the commission of rape, if the vagina swab is collected and sample sealed and sample semen collected from the accused and both samples are examined in the DNA laboratory, it can be ascertained with greater accuracy, if there is complete, match between these two samples (States v. Fleming, No. 90-CR-2716, slip op. (Ill. Cir. Ct., Cook County, 12/03/ 1991))¹

6.1.2. Murder Cases

In murder cases, DNA proof technique can be used for detection of the culprit who has committed murder. Different types of trace elements may be available on the crime scene/spot such as blood, saliva etc. In many cases blood stained clothes of the victim may be recovered from the possession of the accused or the blood-stained, weapon, sword, fingerprints on weapon etc. may be recovered from the possession of the accused. All these elements are valuable materials for DNA test, which signifies presence of accused on crime scene (Troedel v. Wainwright, 667 F. Supp. 1456 (S.D. Fla. 1986)

6.1.3. General Identification of Unlawful

Identification of Unlawful and connecting the Unlawful with crime is the paramount purpose in Unlawful trial and DNA technology serves this purpose. Very often unlawful leave on the scene of crime many elements inadvertently, like; blood, hair, skin cells and much other genetic proof. If these are collected and compared through Variable Number Tandem Repeats patterns with the DNA of Unlawful, he/she can be spontaneously identified.

6.1.4. Detecting Innocence of Many Suspects

DNA's technology is not only helpful for crime detection and identifying Unlawful, it is also helpful for exonerating many innocent persons from the trap of male FIDE Unlawful prosecution (Connors, 1998)

6.1.5. Baby Exchanging Cases

In many parts of the world there is illegal practice of new born baby exchange in hospitals. The real genetic parents are deprived of their original babies. Generally, a female baby is exchanged with a male baby. This is cheating of the worst kind. However, DNA test in such situations has solved the unidentified. Who is the actual real mother of the disputed baby can be ascertained by DNA test (Sharma, 2007). DNA's proof is also used in civil cases for instance when the paternity is in question, at that moment, VNTR (Variable Number Tandem Repeats) analysis can conclusively determine the parentage of a child. This is possible because a person inherits his/her variable number tandem repeats from his or her parents (Adhikari, 2007). In immigration purpose, adoption, medical insurance reasons. All these advances in science and technology have a serious impact on the administration of justice.

6.2. Benefit of Forensic DNA Proof

The prime benefit of DNA technology is its power and capability to examine small sample, damaged by the environment and accurately proves its source. One of the major advantages of DNA proof is its resistance to the degradation of the environment. Besides that, DNA can generate the similar genetic result regardless the size of the proof such as saliva, hair, blood stain, etc.

7. Why Is the DNA Law Needed at This Time?

Law and science are two different disciplines but complementary that are increasingly becoming intermingled. Their complementary and cooperation were felt as science and technology advances. The prevention of crime through systematic means is the need of the hour, hence, the spread of crimes that have been prohibited from happening with the help of practical investigative techniques would make for an additional remarkable record for Law Enforcement Agencies such as Rwanda Investigation Bureau. In circumstances where the victim is in impossibility to identify the perpetrator due to various factors such as mental, physical deficiency and fading memories, there is still the chance that the perpetrator will be known through the use of DNA profiling when there is DNA database (Bennett, 2012). Link between science, technology and law is not given the weight it deserves under Rwandan legal system. The latter is based on the inquisitorial system to find out the truth, while the systematic community uses experimental analysis. Law and science often meet in the courtroom, where Judges, Prosecutors and Advocates often find themselves trapped in systematic concepts which they may not fully understand. Likewise, Judges, having less knowledge due to lacking systematic background, are in impossible position to decide whether systematic proof is accurate and reliable.

8. Conclusion

The usefulness and accuracy of forensic DNA proof as a tool in the hand of Unlawful justice system to convict or exonerate the suspect are vastly supported by various legal literature and severe framework of quality assurance that have been established for National Research Council of The National Academies, Strengthening Forensic Science In The United States: A Path Forward (2009 Report).

According to the 2009 report of National Research Council of the National Academies, Strengthening Forensic Science in the United States: A Path Forward, the best science is conducted in a systematic setting as opposed to a law enforcement setting. Because forensic scientists are often driven in their work by a need to answer a particular question related to the issues of a particular case, they sometimes face pressure to sacrifice appropriate methodology for the sake of expediency. The problem of bias in crime laboratories is not unique to the United States. According to a British Court in the case of R v. Ward, [1993] 96 Crime. App. 1, 68 (U.K.). It was stated that "Forensic scientists may become partisan. The very fact that the police seek their assistance may create a relationship between the police and the forensic scientists. And the adversarial character of the proceedings tends to promote this process. Forensic scientists employed by the government may come to see their function as helping the police". The current judicial scrutiny brought a great development of DNA technology and occupied a significant part towards the acceptance of forensic DNA proof in court of law as legal instrument. This strict examination and scrutiny of DNA sample in the court has contributed in crediting DNA proof as vigorous and most prevailing proof in improving Unlawful justice system. Through the enactment of DNA legislation, Unlawful can be apprehended faster, prevent the occurrence of crimes, hence saving more lives. Legal system has to grow in order to satisfy the needs of the fast changing society and keep abreast with the systematic developments taking place in the country. With the evolution of DNA technology judicial review should ensure that justice is served and public protected. Law cannot remain rigid and static.

References

1. Adhikari, N. (2007). Law and Medicine. Allahabad: Central Law Publication.
2. Adhikary, J. (2007). DNA Technology in Administration of Justice. Burtterworths: Lexis Nexis.
3. Alleyne, L. et al. (2009). Interpol Handbook on DNA Data Exchange and Practice.
4. Annas, G. J. (2004). "Genetic Privacy" in DNA and the Unlawful Justice System: The Technology of Justice. Lazer, D., Ed., Cambridge, MA: MIT Press.
5. Asplen, C. (2008). Forensic DNA Technology and the Genocide Dynamic.
6. Bennett, N. A. (2012). A Privacy Review of DNA Databases. I/S: A Journal of Law and Policy for the Information Society, 817-845.
7. Blackmore, M. (2011). Deputy Director of Public Prosecutions (NSW), Does the Common Law System of Unlawful Justice Protect or Infringe Upon the Rights of the Defendant?

8. Callahan, J. (1996). The Admissibility of DNA Proof in the United States and England, 19. *Suffolk Transnational Law Review*, 537, 547-548.
9. Connors, E. (1998) Convicted by Jury Exonerated by Science. *IPT Journal*, 10, 16.
10. Constitution of the Republic of Rwanda of 2003 Revised in 2015.
11. Developing Uses of DNA Profiling in Support of Unlawful Investigations. *Journal of Law*,
12. DNA: A Prosecutor's Practice Notebook.
13. Etzioni, A. (2002). Implications of Select New Technologies for Individual Rights and Public Safety. *The Harvard Journal of Law & Technology*, 15, 258-290.
14. Etzioni, A. (2004) DNA Tests and Databases in Unlawful Justice: Individual Rights and the Common Good. Washington: George Washington University.
15. Facts on Post-Conviction DNA Exoneration (2012).
16. Flannery, I. M. (1992). Frye or Frye Not: Should the Reliability of DNA Proof be a Question of Weight or Admissibility? *American Unlawful Law Review*, fall: 161.
17. Fleming and State v. Watson, No. 90-CR-5546.
18. <https://sites.google.com/site/pennsaukenforensics/assignments/themythsofcircumstantialevidence>
19. Khaleda, P. (2012). Forensic Use of DNA Information: Human Rights, Privacy and other Challenges. Doctor of Philosophy Thesis, Faculty of Law, Wollongong: University of Wollongong.
20. Krimsky, S., & Simoncelli, T. (2011). Genetic Justice: DNA Data Banks, Unlawful Investigations, and Civil Liberties.
21. Law No. 15/2004 of 12/06/2004 Relating to Proof and Its Production.
22. Lazer, D. (2004). DNA and the Unlawful Justice System: The Technology of Justice. Boston, MA: The MIT Press.
23. *Medicine & Ethics*, 33, 545-558. <https://doi.org/10.1111/j.1748-720X.2005.tb00517.x> Yeshion, T. (2014). The Myths of Circumstantial Proof.
24. Murangira, B. T. (2013). Impact of DNA Technology on Administration of Justice: A Critical and Comparative Study of Legal and Ethical Issues between the USA, India and Rwanda. PhD Thesis, Faculty of Law, Pune: University of Pune.
25. National Research Council of the National Academies (2009). Strengthening Forensic Science in the United States: A Path Forward.
26. Parikh, & Mishra (2007) *The Principles of Medical Jurisprudence, Medical and Forensic Science, DNA test and Toxicology* (3rd ed.). Delhi: CTJ Publications.
27. *People of the State of California v. Orental James Simpson* (1994).
28. Report of Science and Technology Committee, on the Forensic Science Service (2011). RP0113/08/TGI/NYGE of 08/02/2010 (24).
29. RP575/07/TGI/ NYGE of 30/01/2009 (19).
30. Rwanda Penal Code (2012).
31. Rwanda Unlawful Procedure Code (2013).
32. Sharma, A. (2007). Guide to DNA Tests in Paternity Determination & Unlawful Investigation (p. 6). New Delhi: Wanhwa & Company. *States v. Fleming*, No. 90-CR-2716.
33. *Troedel v. Wainwright*, 667 F. Supp. 1456 (S.D. Fla. 1986). *Aff'd*, 828 F.2d 670 (11th Cir. 1987). Van Cuijk, M. (2009). Person Identification Using DNA. 14 July 2009.
34. Williams, R., & Johnson, P. (2005). Inclusiveness, Effectiveness, and Intrusiveness: Issues in the