University of Namibia

Faculty Law

Research Topic:

Challenges faced by the admittance of DNA evidence in criminal courts with specific reference to Namibian courts.

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Submitted in partial fulfillment of the LL.B degree at the Law Faculty, University of Namibia

Due Date:

November 2011

SCHEDULE A

"I the undersigned, hereby declare that the work contained in this dissertation for the purpose of obtaining my degree of LL.B is my own original work and that I have not used any other sources than those listed in the bibliography and quoted in the references."

Signature: _____

Date: _____

Supervisor's Certificate

I, _____ hereby certify that the research and the writing of this dissertation was carried out under my supervision.

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ABSTRACT

Mention DNA evidence and the case is closed. So frequently, it is believed that DNA is the be-all end-all criminal investigation. DNA evidence is seen to be the cold hit technique, the science that will end the trial.

It is the duty of our courts to make findings pertaining to the existence or the non-existence of certain facts before pronouncing the rights, duties and liabilities of the parties engaged in a dispute. Society and its modern times demand that DNA evidence be used in criminal courts to reach fair and just outcomes, justice however, on the other hand demands that DNA evidence used in criminal cases be just fair and unfailing.

The purpose of this paper is to shed the light on the true nature of DNA as evidence in criminal courts.

The objectives are further to:

- To educate on the science and its accuracy vs. the subject and its controversies.
- To inform lawyers about to embark on a journey of allowing forensic bio-information to stand as evidence in criminal courts, of the necessary challenges that come with the admittance of DNA evidence.
- To deal with the 0.001% not covered. There is a NOTION that “DNA evidence is 99.9% conclusive”.
- To wipe out the assumption that DNA evidence is the be-all end-all crime scene investigation and to establish whether or not the police are too quick to grab a suspect: Namibian based”.
- To deal with DNA evidence and its ability to end a trial.
- To create awareness of the science underlying DNA and also to put forth some valid recommendations that can assist in the proper handling of such evidence.

Furthermore, to provide criminal justice litigators with the necessary information not only to understand the significance of DNA evidence, but also to successfully adduce, recognize and if necessary, challenge the validity of such evidence in court”.

ACKNOWLEDGMENTS

Firstly, I would like to thank our heavenly father for inspiring in me the enthusiasm to write on this particular subject matter.

I would also like to thank Deon Husselmann for the idea and for trusting me, to write on what he thought was an utterly important matter, which is to vaguely dealt with.

I am furthermore greatly indebted to Prof. Nico Horn for his inspiring comments and his positive remarks to my chosen topic.

Lastly, sincere gratitude goes to my parents, my wonderful friends, Ndeyapo, and Louis Karsten. Every contribution in whatever way counted, thank you.

ABBREVIATION AND DEFINITIONS

DNA: Deoxyribonucleic Acid

Chromosome: a thread-like structure that carries genetic information arranged in a linear sequence; in humans, it consists of nucleic acids and proteins.

Locus: A specific physical location on a chromosome. It is the place where you find the gene. The plural is LOCI (with a soft ‘c’ pronounced LO-S-EYE).

Allele: (ALL-EEL): An allele is one of the two copies of a gene on each f the two copies of a chromosome. Alleles are inherited separately from each parent and for a given gene an individual may have the same DNA sequence (homozygous 9HOMO-Z-EYE’-GUS) or the sequence may vary somewhat between the copies (heterozygous) (HETERO-Z-EYE’-GUS)).

Genotype: the genetic constitution of an organism as distinct from its expressed features or phenotype.

Phenotype: refers to the physical appearance of a trait (i.e., blue eyes).

DNA Profile: the set of genotypes possessed by a person at two or more Loci is a multi-locus genotype or DNA profile.

TABLE OF CONTENT

CHAPTER ONE

Introduction

Progressively more and more in society, we require our human conflicts to be resolved in courtrooms. Some conflicts are however, more complex than others and those entrusted with making the decisions on particular matters, often, lack the knowledge base to make informed or sophisticated decisions[1]. It is for this very reason that the need for expert testimony has risen.

DNA evidence represents 'real' science, which deals with empirical methods appropriate to resolution by conventional scientific methods and in which the scientific research was not developed specifically for forensic reasons. [2]

There are many challenges that come with the admittance of DNA evidence in criminal courts all over the world. The paper outlines these challenges with specific reference to the Namibian legal system.

1.2. Contextual framework

As solid as the science of DNA there are many controversies that come with the subject of admitting such evidence into criminal courts.

1.3. Conceptual framework

DNA is a double-standard molecule that contains the genetic code; composed of 46 rod-shaped chromosomes, 23 of which is inherited from the mother and 23 of which are inherited from the father.

[1] Stern, P. 1997. *Preparing and presenting Expert Testimony in Child Abuse Litigation; A guide for Expert witnesses and Attorneys.* USA: Sage Publications, p 1.
[2] Meintjes-Van Der Waldt, L. (2010). *DNA in the Courtroom; Principles and Practice.* South Africa: Juta @ Co. Ltd, p 1.

The use DNA samples are now a routine part of solving crime. DNA evidence represents real science, which deals with empirical methods appropriate to resolution by conventional scientific methods.

1.4. Statement of the problem

There are many challenges that come with the admittance of DNA evidence in criminal courts. This paper thus seeks to shed light on these challenges with specific emphasis being drawn to Namibian courts.

1.5. The Hypothesis

Can one really say that DNA is the only evidence that has the ability to put an end to criminal trials? There is a notion that DNA is the be-it-end-it all crime scene investigation evidence.

1.6. Significance of the study

The significance of the study is to establish the challenges that are faced by the admittance of DNA evidence into criminal courts. It is so often believed that DNA evidence is the be-it-end-it all crime scene investigation evidence. This paper thus wishes to put an end to this misperceived notion and to adequately address the challenges that come with the admittance of expert evidence in criminal courts. The purpose of this paper is to shed the light on the true nature of DNA as evidence in criminal courts.

The objectives of the paper are to:

To educate on the science and its accuracy as opposed to the subject and its controversies. It aims at informing lawyers about to embark on a journey of allowing forensic bio- information to stand as evidence in criminal courts, of the necessary challenges that come with the admittance of DNA evidence; to deal with the 0.001% not covered as there stands a notion that “DNA evidence is 99.9% conclusive”. The paper also wishes to wipe out the assumption that DNA evidence is the be-all end-all crime

scene investigation, and it curbs the question of whether the police are too quick to grab a suspect concisely. Furthermore, the paper deals with DNA evidence and its ability to end a trial and it also creates awareness of the science underlying DNA.

1.7. Scope and Limitations

Thispaper will provide criminal justice litigators with the necessary information not only to understand the significance of DNA evidence, but also to successfully adduce, recognize and if necessary, challenge the validity of such evidence in court".

It will set out the difference between a profile and a database.However the focus will mainly be on the challenges that come with the admittance of DNA evidence and the controversies that come with the subject. In other words the scope is limited to challenging, not the conclusiveness of the science per se, but rather the controversies that come with the admittance of such evidence. Reference is made too many legal systems all over however; detailed reference is made to the Namibian legal system.

Recommendations on how to do justice to this powerful science will make up the concluding remarks to this paper.

1.8. Literature Review

Several books, newsletters and articles by scholars were consulted during the research as well as numerous internet sources to help assist in the formulation and conclusion of this paper.Specific reference however, needs to be made to the book of L Meintjies-Van Der Walt titled DNA in the Courtroom. This book was of great assistance during the period of research as it provided useful insight on the science underlying DNA.

The consultation of Namibian cases amongst others also played a vital role during the period of research. The ground-breaking cases of dual Murder suspect *Romeo Schiefer* [3]and the rape case of *Magdelena Stoffels*[4], make up a vital part of the arguments formulated in this paper. Many other foreign cases were consulted like the well known

[3] S v Schiefer. 2008. In Process.
[4] Magdelena Stoffels case. 2010. In Process.

case of O. J Simpson[5] and the Amanda Knox[6] case amongst others. These cases played an equally fundamental role during the process of research as the DNA evidence in these cases made up the crux of the evidence before the different juries and it also made visible the various challenges that come with the admittance of such evidence.

Schwikkard and Van Der Merwe's book on the principles of evidence covered the major parts dealing with relevance and admissibility as part of the general principles of the law of evidence. The book titled the presumption of innocence also written by P J Shwikkard was also amongst the books consulted during the compilation of this dissertation.

Msbenzi Dumani's research project titled "*Aspects of Expert Evidence in the criminal Justice System"* was also of great assistance towards the completion of this dissertation.

1.9. Research Methodology

The methodology of the study is secondary research based on data and information by various experts to the related matter. It can be said that a qualitative approach was followed.

Qualitative approaches have the advantage of allowing for more diversity in responses as well as the capacity to adapt to new developments or issues during the research process itself and it thus helped structure each chapter in a manner that could fully reflect the topic discussed in that chapter.

1.10. Summary of Chapters

Chapter 1 outlines the overall framework of the paper, from the contextual framework to the summary of chapters etc.

Chapter two deals with the controversy underlying the admittance of DNA evidence in criminal courts. This chapter deals directly with the points in dispute to alert readers

[5] The police of the State of California v Orenthal James Simpson. 1995.
[6] Amanda Knox case 2007.

from the beginning of the aims of this dissertation and to create a sort of baseline of what will be said throughout the paper and thus emphasizing the importance of such.

Chapter three outlines the universal principles of law of evidence and with the admissibility of expert evidence. This chapter also covers the principles of relevance and admissibility.

Chapter four deal with DNA evidence as circumstantial evidence. It looks at the principle of beyond reasonable doubt versus the principle of presumption of innocence. These principles are enshrined into this chapter solely for upholding the procedural principles of the law of evidence.

Chapter five deal with the science underlying the admittance of DNA evidence.

Chapter six deal with the possibility that DNA samples may be fabricated. Scientists in Israel have successfully fabricated blood and saliva samples containing DNA, potentially undercutting what has been considered, the key evidence in the conviction or exoneration in criminal cases. This chapter further outlines possible human errors when collecting DNA samples for evidence in criminal cases and the flaws created in the evidence by such errors.“ Reference will be made to the case of the American student “Amanda Knox”

Chapter seven deal with Namibian case law in specific reference.

- State v Romeo Schiefer[7]: Is Schiefer the 0.001% that is exempted from the conclusiveness of DNA evidence?
- S v Shipanga and Another: DNA evidence is 99.9% conclusive.
- Magdelena Stoffels case:[8] Is DNA evidence defeating the course of justice? Is the police to quick to take the first found suspect and then ending the investigation almost immediately.

[7] S v Schiefer. 2008. In Process.
[7] S v Shipanga And Another. 2009.
[8] Magdelena Stoffels case. 2010. In Process

Chapter eight provides the reader with concluding remarks as well as with suggestions or recommendations on how to improve the laws so as to incorporate proper legislation to guide the admittance of DNA evidence in criminal courts.

CHAPTER TWO

2. CHALLENGES FACED BY THE ADMITTANCE OF DNA EVIDENCE IN CRIMINAL COURTS

2.1 THE CONTROVERSY

As the times have modernized, DNA evidence has become an important part in the courtrooms today. It has grown so considerably and serves as the most cutting-edge technology used to solve crimes in most countries. As mentioned earlier DNA evidence represents real science that deals with empirical methods suitable to resolution by conservative scientific methods and in which the scientific research was not developed specifically for forensic reasons as Most other forensic techniques such as fingerprinting, ballistics and hair and hair and fiber analysis are primarily only of interest to the legal system.[9]

This paper wishes to examine the arguments surrounding the notion that DNA evidence is conclusive evidence. Is it possible to say that no controversy exists, or can one rather argue that DNA is an uncontested science but not an uncontested subject?

Forensic bio-information has no value if the police, witnesses, the legal profession and legal decision-makers do not understand it.[10] It is thus necessary to assess the worth as well as the confines of DNA in the psychoanalysis of physical evidence. It is also vital to be familiar with some of the essential principles underlying these diverse disciplines.

[9] Meintjes-Van Der Waldt, L. (2010). *DNA in the Courtroom; Principles and Practice.* South Africa: Juta @ Co. Ltd, p 1.
[10] Ibid. P. 1

It thus is essential that lawyers should be aware of[11]:

- The science underlying DNA;
- The latest developments in the field; and
- The challenges faced by the admittance of DNA evidence.

There are many places in the chain of expert evidence where human error can affect the outcome of scientific testing, i.e. the collection of samples at the crime scene, mixing of samples, contaminating samples, mislabeling, use of non-sterile tools or repositories. No matter how skillful the expert or how compelling the specific scientific technique, if the actual procedures do not comply with a certain quality of guaranteed standards, the results will be flawed and in such instances the subject matter contestable.

However because the science is relatively new and very complex and because of the notion that DNA is the “be It end it” all evidence, most people fail the scientific process of analyzing DNA evidence as part of circumstantial or direct evidence.

Today DNA evidence is presented as the silver bullet for catching criminals, but this is not always the case. Many times, there is no DNA of the criminal found at the scene of the crime, or the fingerprint is smudged, the sample is slightly ruined. In addition, DNA takes a long amount of time and facilities are not always available to the smaller communities. Therefore, where DNA can be a very effective tool for finding and prosecuting criminals, it is not always possible.

Judges and lawyers especially those in criminal courts place a high reliance on the availability of DNA evidence as part of the evidence. It has become so vital that where there is no DNA evidence, it is believed that the evidence against the suspect is limited. Conversely, when there is DNA evidence it is alleged that the evidence is very strong. This notion or believe is however very problematic, because DNA evidence is not always available and the mere fact that a person’s DNA is found at a crime scene does not necessarily mean that he/she committed the crime, but it merely shows that he/she was there at some point in time.

[11] Ibid.

It is thus of vital importance that when dealing or when assessing DNA evidence, one should not forget the ordinary rules of criminal procedure and most importantly the rules that guide the law of evidence. Scientific evidence must be seen to be believed; yet a trial is a proceeding and a proceeding has a procedure that is guided by rules and regulations.

CHAPTER THREE

UNIVERSAL PRINCIPLES OF LAW OF EVIDENCE AND ADMISSIBILITY OF EXPERT EVIDENCE

3.1 INTRODUCTION

Due to the notion, that DNA evidence is so conclusive, we tend to forget the ordinary rules of criminal procedure and the rules of the law of evidence. It so often that DNA evidence is admitted into court, despite its, irrelevance, immateriality and its inability to prove or to disprove any point or fact in criminal proceedings.

The law of evidence establishes rules to determine what facts may be proved in trial and what evidence may be called to prove those facts.[12] Adherence to these rules play an important part especially in criminal trials because, evidence is something that tends to prove or disprove any fact or conclusion.[13]

3.2 THE RELEVANCE AND ADMISSIBILITY OF EXPERT EVIDENCE IN CRIMINAL COURTS

The general rule pertaining to the law of evidence as provided for in section 210 of the Criminal Procedure Act, 1977[14] is that no evidence to any fact, matter or thing shall be admissible if irrelevant or immaterial and if it cannot conduce to prove or to disprove any

[12] May, R. 1999. *Criminal Evidence,* 4th edition. London: Sweet & Maxwell, p 3.
[13] Ibid.
[14] No. 51 of 1977,

point or fact in criminal proceedings. Rule 401 of the Federal Rules of Evidence of the United States of America defines relevant evidence as follows:[15]

*"*Evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable".

Inadmissible evidence on the other hand can relate to one's opinion of a subject matter for example the opinion of a witness. However, opinion evidence is admissible if it is relevant but inadmissible if it is irrelevant.[16] Thus any opinion, whether expert or non-expert, which is expressed on an issue that the court can decide without receiving such opinion, is in principle inadmissible because of its irrelevance.[17]

In South Africa the prevalent view is that experts may be introduced not only where the court by lack of special knowledge and skill is incapable of forming an opinion unassisted, but also in circumstances where the court could well come to a conclusion, but the help of an expert would be useful.[18]

Expert witnesses are called to testify about matters that are considered to be beyond the understanding of the ordinary layperson. The expert witness thus assist the court in making just decisions and the test for admissible expert opinions is linked to the expertise of the expert, his/her qualifications and the usefulness of the expert opinion to put an end to a trial.[19]

Generally expert witnesses are allowed to testify if they possess some specialized knowledge, training or possible experience sufficient to enable them to supply information and opinion not generally available to the average person.

Courts are charged with the responsibility of not admitting invalid evidence, for to do so would violate the fundamental principle of evidence that only relevant evidence may be

[15] Schwikkard, P.J Van Der Merwe, S.E Collier, D.W & De Vos, W.L & Van Der Berg, E. (2009). *Principles of Evidence*. South Africa: Jute & Co. Ltd, p46.
[16] R v Vilbro 1957 (3) SA 223 (A), at pp 228-229; Ruto Flour Mills Ltd v Adelson 1958 (4) SA 235 (T) 237; R v David 1962 (3) SA 305 (SR); S v Nangatuuala 1974 (2) SA 165 (SWA) 167. See further Hollington v Hewthorn& Co Ltd 1943 KB 589.
[17] S v H 1981 (2) SA 586 (SWA).
[18] Meintjes-Van Der Waldt, L. (2010). *DNA in the Courtroom; Principles and Practice.* South Africa: Juta @ Co. Ltd.
[19] Dumani, M. (2005). Aspects of Expert Evidence in the Criminal Justice system.

admitted. Equally, a court may not exclude valid information, for to do so would violate the corresponding fundamental principle that all relevant evidence is admissible.

The law is challenged to devise an admissibility test that will allow legitimate expert evidence, while withholding invalid expertise. Expert evidence has come to play a significant and ever-increasing role in litigation.

Expert witnesses are called to testify about matters that are considered to be beyond the ordinary understanding of lay people.[20]

The expert witness is there to assist the court and the test for the admissibility of the opinion of such a witness is whether the expert is better qualified than the judicial officer to draw inference or whether, although the court can come to an unassisted opinion, the help of the expert would be useful.[21]

Expert witnesses would generally be allowed to testify if they possess some specialized knowledge, skill, training or possible experience sufficient to enable them to supply information and opinion not generally available to the average person.[22]

An expert need not have any formal qualifications nor need he have acquired his expertise in a profession, as long as the expert gained sufficient knowledge from experience. In both English and South African law, it has been held that expert evidence is only admissible as to matters outside “ordinary human experience”.[23]

[20] Ibid, p 6.
[21] Ibid.
[22] Ibid.
[23] ibid

CHAPTER FOUR

4.1. DNA EVIDENCE IS CIRCUMSTANTIAL EVIDENCE

Circumstantial evidence is sometimes the most compelling, and often more convincing than testimonial evidence from eyewitnesses.Circumstantial evidence is not conclusive evidence, even though it is believed to be[24]. Circumstantial evidence is a collection of inter related facts that link the defendant, the scene and the victim and often a motive all together[25].

Circumstantial evidence is evidence that asks a trier of fact to consider the second trier of inferential reasoning. Circumstantial evidence is thus evidence that has no direct bearing on a fact in dispute. Its significance lies in the fact that it relates to various associated circumstances from which a judge might draw an inference as to the matter in dispute. Cross and Tapper refer to circumstantial evidence as facts of other facts[26].

There are certain rights and duties that stem from the law of evidence, like the right to cross- examine and the duty to adduce evidence. These rights and duties are of a procedural nature in Evidence that that involves only the first trier is called direct evidence. Direct evidence generally concerns the assertion of a fact by a person who claims to have perceived it with his own senses. The assertion may be made orally by a witness in court or in writing by a witness or someone else out of court. DNA itself is circumstantial evidence and the basic rules that apply to circumstantial evidence is set out in the case of R v Blom:[27]

- The inference sought to be drawn must be consistent with all the proved facts. If it is not, then the inference cannot be drawn.

[24] http://answersyahoo.com/question/index?gid=2011307150752aak3-accsessed on 5th July 2011.
[25] ibid
[26] C tapper and R Cross & Trapper on Evidence (2007) 31; sited in Meintjes-Van Der Waldt, L. (2010). *DNA in the Courtroom; Principles and Practice.* South Africa: Juta @ Co. Ltd.
[27] R v Blom 1939 AD 188: "Two cardinal rules of Logic". sited in Meintjes-Van Der Waldt, L. (2010). *DNA in the Courtroom; Principles and Practice.* South Africa: Juta @ Co. Ltd

- The proved facts should be such that they exclude every reasonable inference from them save the one sought to be drawn. If they do not exclude other reasonable inferences, then there must be a doubt whether the inference sought can be drawn.

Every single piece of circumstantial evidence need not be proved beyond reasonable doubt. However, the final verdict can only be reached where the evidence as a whole shows that the guilt of an accused has been proved beyond reasonable doubt.

Conclusive evidence is that part of evidence, which from its nature, the law allows no contradiction or explanation. A conclusive presumption is an inference that the law makes so peremptorily that it cannot be overthrown by any contrary proof, however strong. Circumstantial evidence is not conclusive evidence.

Does this not go without saying; DNA as the science is conclusive, however DNA evidence in criminal trials is not conclusive as DNA evidence forms part of circumstantial evidence and circumstantial evidence is not conclusive because it furnishes indirect proof.

4.2. THE PRINCIPLE OF BEYOND REASONABLE DOUBT VERSUS.THE PRINCIPLE OF PRESUMPTION OF INNOCENCE UNTIL PROVEN GUILTY.

The principle of beyond reasonable doubt

Not every single piece of circumstantial evidence need be proved beyond reasonable doubt. However, the final verdict can only be reached where the evidence as a whole shows that the guilt of an accused has been proved beyond reasonable doubt.

Beyond reasonable doubt is a term that represents the highest level of proof and sureness in criminal procedure required to return a verdict of “guilty”.[28] It is of the most fundamental importance in criminal trials, that the lawmaker is convinced beyond a reasonable doubt of the defendant’s guilt. Beyond reasonable doubt is sometimes also referred to as the moral certainty of those delivering the verdict in question.[29] However,

[28] *Beyond Reasonable Doubt*. Available at http://www.mojolaw.com; last accessed on 5 July 2011.
[29] ibid

note that, although beyond reasonable doubt is not the same as absolute certainty it is very closely related.

It is meant to signify a far stricter standard than the "preponderance of evidence required to render judgment in a civil law case. In criminal trials the lawmakers must not only be convinced of their verdict after an impartial and rational consideration of the evidence presented in the case (or the lack of evidence), but must be as certain of the verdict they deliver as they would in the execution of the most crucial of their own affairs.[30] The lawmaker's must thus upon the proof of all the elements of the crime decide the guilt or non-guilt of the accused person beyond a reasonable doubt and only thereafter deliver a verdict.

The question now arises whether DNA evidence of a match and its probabilities can convict an accused in the absence of other evidence. Semikhodskii[31] remarks that the answer 'can be found in both legal theory and practice'. He continues:

> Instead of asking the question whether DNA evidence on its own can prove the guilt of the suspect, one has to ask whether DNA evidence on its own is enough to prove each element of *actusreus* and *mensrea* of the crime in question as well as their coincidence in time.

The policy of Crown Prosecution Service in England is that a suspect should not be charged solely based on a match between his DNA profile and the crime scene DNA profile.[32] There are two reasons why this policy is maintained by the Crown Prosecution service.

- Firstly, it is recognized that DNA profiling is not a foolproof science, particularly where very small or otherwise deficient crime samples are available for testing. In such circumstances the reliability of the DNA will depend upon the accuracy of the testing, the measurement involved and the profile matches. Whilst this will

[30] *Beyond Reasonable Doubt*. Available at http://www.mojolaw.com; last accessed on 5 July 2011.

[31] Meintjes-Van Der Waldt, L. (2010). *DNA in the Courtroom; Principles and Practice.* South Africa: Juta @ Co. Ltd.

[32] www.cps.giv.uk/../pdf-00328%20DNA%20charging20Guidence.pdf last accessed on18 August 2011.

not necessarily provide proof of guilt, they will have a measurable statistical significance that may point strongly to guilt.[33]

- The second concerned a Court of Appeal judgment.[34] Ronald Lashley was convicted of robbery. The only evidence against him was a DNA match. He elected not to testify. The judge instructed the jury as follows:

  Members of the jury, if you accept the scientific evidence called by the Crown, this indicates that there are probably only four or five white males in the United Kingdom from whom that semen could have come. The defendant is one o them. If that is the position, the decision you have to reach, on all the evidence, is whether you are sure that it was the defendant who left the stain or whether it is possible that it was one of the other small group f men who share the same DNA characteristics.[35]

The jury was also instructed that it could draw an adverse inference from the accused person's silence.[36] The jury found Lashley guilty. The Court of Appeal set aside the conviction.

The Court of Appeal held that the significance of DNA evidence depends crucially on other circumstantial evidence such as evidence that the accused person's home was in close proximity to the crime scene. It can all depend on whether the accused has an alibi.

In South Africa, this principle was applied in the case of Mana v S.[37]

<u>The Principle Pertaining to the Presumption of Innocence</u>

Elliot defines a presumption as 'as a conclusion which may or must be drawn in the absence of contrary evidence'.[38] In R v Bakes[39] Dickson CJC noted:

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[33] Ibid.
[34] Meintjes-Van Der Waldt, L. (2010). *DNA in the Courtroom; Principles and Practice.* South Africa: Juta @ Co. Ltd in R v Lasheley 2000 CA.
[35] Ibid.
[36] Ibid.
[37] 2009]1 ALL SA 143 (SCA).
[38] Schwikkard, PJ. (1999). *Presumption of innocence.* South Africa: Juta& Co Ltd.
[39] 1986 (4) DLR, at 200.

"Presumptions can be classified in two general categories: presumptions without basic facts and presumptions with basic facts. A presumption without a basic fact is simply a conclusion, which is to be drawn until the contrary is proved. A presumption with a basic fact entails a conclusion to be drawn upon proof of the basic fact."

Presumptions are traditionally classified as in terms of three categories: irrefutable presumptions of law, rebuttable presumptions of law and presumptions of fact.[40]

Irrebuttable presumptions of law furnish conclusive proof of the fact presumed and cannot be rebutted by evidence to the contrary.[41] The term 'presumptions in this context are somewhat misleading. The reason being that, irrebuttable presumptions of law are really rules of substantive law.[42] Rebuttable presumptions of law on the other hand "are rules of law compelling the provisional assumption of fact. They are provisional in the sense that the assumption will stand unless destroyed by countervailing evidence".[43] Lastly, presumptions of facts as are merely frequently recurring examples of circumstantial evidence.[44]

<u>The scope of the presumption of innocence</u>

"Davis, AJA in R v Ndhlovo,[45] in applying the Woolmington v The Director of Public Prosecutions,[46] held that:

In all criminal cases it is for the Crown to establish the guilt of the accused, not for the accused to establish his innocence. The onus is on the Crown to prove all the averments necessary to establish his quilt. The only exception o the above rules, as to the onus being on the Crown in all criminal cases to prove the unlawfulness of the act and the guilty intent of the accused, and of his being entitled to the benefit of any

[40] Schwikkard, P.J Van Der Merwe, S.E Collier, D.W & De Vos, W.L & Van Der Berg, E. (2009). *Principles of Evidence*. South Africa: Jute & Co. Ltd, p 499.

[41] Ibid.
[42] Schwikkard, P.J Van Der Merwe, S.E Collier, D.W & De Vos, W.L & Van Der Berg, E. (2009). *Principles of Evidence*. South Africa: Jute & Co. Ltd, p 499.
[43] Ibid, p 500.
[44] Ibid.
[45] 1945 AD at 369.
[46] 1935 AC 462 (HL) 481.

reasonable doubt thereon, in regard to intention, the defense of insanity, and, in regard to both unlawfulness and intention, offences where the onus of proof is placed on the accused by the wording of the statute".

The substantial recognition of comprehensive principles of criminal liability has largely relieved the South African courts of having to deal with the defense-offence dichotomy that has plagued other jurisdictions. According to these principles, criminal liability or guilt is dependent on proof that the accused has committed:

- voluntary conduct which is unlawful and that this conduct was,
- accompanied by comprehensive capacity and
- Fault.[47]

These comprehensive principle requirements need be proved beyond a reasonable doubt and any factor neglecting one of these elements must be disapproved beyond reasonable doubt.

With reference to the mentioned principles pertaining to beyond reasonable doubt and the presumption of innocence it cannot be foreseen that there is a very fine line between these two principles of law. It not only affords the accused person the possibility of a fair trial as provided by the Namibian constitution, as it also coats the criminal justice system with a sense of expertise towards the proposed standards of proving evidence in criminal trials.

CHAPTER 5

5.1 THE SCIENCE UNDERLYING DNA

"*What is the value of forensic bio-information if the police witnesses, legal professions and legal decision-makers do not understand it?*[48]"

[47] Ashworth A. 2003. Principles of Criminal Law, 4th edition. New York: Oxford University Press.
[48] L Meintjes-Van Der Waldt. 2010. *DNA in the Courtroom, Principles and Practice*. South Africa: Juta @ Co. Ltd.

Forensic DNA analysis involves the intersection of molecular biology, genetics and statistical analysis. DNA can be extracted from the following sources of evidence, viz blood, semen, vaginal, hair with roots, skin cells, dandruff, sweat stains, shed hair shafts, bone, teeth, tissue, saliva and nasal secretions. Faeces, dandruff and shed hair shafts are usually not good sources of DNA. The relevance of DNA to forensic purposes is that, except for identical twins, every persons DNA is distinctive.[49]

DNA is the genetic material that is passed from a parent to a child, (also known as the heritary blueprint). Amid human beings 99,9% of DNA sequences are identical. The Human body is made up of cells. There are two sets of DNA molecules in a human cell. One is found in the nucleus (nuclear DNA) and the other in the mitochondria, which are found in the cytoplasm.

Nuclear DNA is more variable than mitochondrial DNA and therefore more useful for identical purposes. Nearly all body cells (except, for example, mature red blood cells contain a nucleus and a cytoplasm.[50]

In each cell, a person's DNA is the same and it stays the same throughout their lifetime. Scientists have developed techniques to identify the variations within an individual's sequencing. These techniques form the basis for DNA profiling[51].

A DNA profile is the set of genotypes possessed by a person at two or more loci is a multi-locus or DNA profile.

The DNA in each human cell nucleus is around 3 billion nucleotides long. Each of the bases is linked not only with its neighbors in the long strands, but also across to another base in a parallel strand, making DNA takes on a ladder-like structure. In the DNA molecule, this ladder is twisted into the famous double helix. The three billion 'base pairs' do not form a single continuous chain, but coil up into separate sections, called chromosomes.[52]

[49] Ibid, p 3.
[50] Ibid at p, 4.
[51] Ibid.
[52] L Meintjes-Van Der Waldt. 2010. *DNA in the Courtroom, Principles and Practice*. South Africa: Juta @ Co. Ltd, p 4.

Chromosomes are thread- like structures that carries genetic information arranged in a linear sequence; in humans, it consists of nucleic acids and proteins.

In each human cell there are 46 chromosomes with 20 000-25 000 genes carried in these chromosomes. The chromosomes are arranged in 23 pairs, and one chromosome per pair is inherited from each parent.[53] The 23rd pair is different from the others, as it determines an individual's gender. An offspring always receives an X-chromosome from the mother but may get an X or a Y from the father. Individuals with XX in the 23rd chromosome are female, while those with XY are male. The chromosomes combine to form a genome or genetic code.[54]

Genes are found at a particular site or locus on a particular chromosome. A locus is a specific physical location on a chromosome, alternatively, the place where you find the gene.[55] Generally, individuals have two copies of each gene at a given locus-one from the father and one from the mother. At each locus examined by DNA tests, a person typically has two alleles, one maternal and one paternal. This pair of alleles are called a genotype. An allele is one of two copies of a gene on each of the two copies of a chromosome. Alleles are inherited separately from each parent and for both a given gene an individual may have the same DNA sequence or the sequence may vary somewhat between the copies.

A genotype is the genetic constitution of an organism as distinct from its expressed features of phenotype (refers to the physical appearance of a trait (e.g., blue eyes).

Structurally, DNA is a double helix-two standards of genetic material spiraled around each other. Each strand has a backbone made of sugar and phosphate groups and a sequence of nitrogenous bases, also called nucleotides attached to the sugar groups. A base is one of four chemicals;[56]

1. Adenine;
2. Guanine;

[53] Ibid, p 5.
[54] ibid.
[55] Ibid, at p 6.
[56] L Meintjes-Van Der Waldt. 2010. *DNA in the Courtroom, Principles and Practice*. South Africa: Juta @ Co. Ltd.

3. Cytosine; and
4. Thymine.

A nucleotide is the unit of DNA consisting of one of four basis adenine (A), guanine (G), Cytosine (C), or thymine (T), attached to a phosphate-sugar group.

The two stands of DNA are connected at each base. Although the bases within each strand can be in any order, the cross-links between strands are limited:

- Base A will cross-link only to base T and
- Base C will cross-link only to base G.

This means that the two strands in a molecule of DNA are complementary; knowing the sequence of one enables the other to bedescribed. This complementary is vital in allowing the DNA molecules to be copied, as is necessary every time a cell divides to form new tissue. The links between the two strands are hydrogen bonds-weak bonds, which are very sensitive to the chemical conditions surrounding the molecule.[57]

When cells divide, small changes to the cell chemistry cause the hydrogen bonds to break, and the DNA molecule splits into its two component strands. Each half of the DNA molecule then picks up more bases to resemble is complementary strand, thus making two complete versions of the whole molecule. It is through this process that copies of exactly the same DNA sequence, all 3 billion or so bases, are passed on from a cell to its daughter cells and therefore are found in each of the cells of the human body. The chemical structure of everyone's DNA is the same.

The only difference between people and animals is the order of the base pairs. There are so many millions of base pairs in each person's DNA that every person has a different sequence. Via these sequences, every person could theoretically be identified solely by the sequence of his/her base pairs. However because there are so many millions of base pairs, scientists instead use a small number of sequences of DNA from the non-coding DNA that are known to vary greatly among individuals, and they analyze those to get a certain probability of a match.

[57] ibid

DNA tests are thus useful for identification purposes because DNA profiles are highly variable across different people, making it unlikely that two different people will happen to have exactly the same profile. However, such possibility exists as different individuals may by chance have the same genotypes in one or more loci. Nevertheless, the likelihood of such a chance similarly depends on both the rarity of the matching genotype at each locus and the number of the loci examined.

By looking at the science of DNA, it becomes very clear that the biological principles underlying the DNA profiling can never be in dispute because the science is solid. Thus, there exists no controversy as to the science; however, DNA samples, as evidence in criminal courts is a controversial issue because the *subject* of DNA is not as solid as the *science*. The science can be solid but the evidence could have been contaminated which causes the subject pertaining DNA evidence to be that of controversial nature.

Scientists in Israel have demonstrated that it is possible to fabricate DNA evidence, undermining the credibility of what has been considered the gold standard of proof in criminal cases[58].

CHAPTER SIX

6.1 FABRICATION OF DNA RESULTS

In almost every instance where DNA evidence is used, the defense can easily cast doubt on the expert's experience, methods and opinion, however, this tactic is very likely o fail especially where experienced and qualified experts are used. The only successful attempt in instances like these is most probably, where the results of the DNA tests have been tampered with.

[58] Pollack, A. 2009. *DNA evidence can be fabricated scientists show*. http://www.nytimes.com last accessed on28 September 2009.

This chapter asserts that while DNA analysis has become a centerpiece of law enforcement, the possibility that such evidence can be fabricated has not been considered. The mere thought of this, is potentially terrible news for prosecutors, police and law makers that use DNA testing to substantiate or find information.

6.2. HUMAN ERRORS- AMANDA KNOX CASE DIRTY CLOVE

DNA evidence played a vital role in securing the convictions of Amanda Knox and her co-defendant Raffaele Sollecito in the 2007 murder of Meredith Kercher, a Britain who shared an apartment with Knox while they were both exchange students in the city of Perugia. However evidence was so flawed that some dare said, "If Amanda Knox is found guilty of murdering Meredith Kercher, it must be the BBC's fault, no one else's.[59]

Knox, 24, is serving 26 years after she was convicted of sexually assaulting and murdering Kercher in the apartment the two shared in Perugia in 2007.[60] Knox's ex-boyfriend and co-defendant Raffaele Sollecito, 27, of Italy, was convicted of the same charges and jailed for 25 years. Both are appealing against their convictions.

Independent experts however showed that investigators made obvious errors, during the collection of the genetic evidence that was used to convict the American student Amanda Knox of the murder that took place in Italy. These errors' included the wearing of dirty cloves whilst handling the evidence as well as not wearing protective equipment such as masks or hair caps. These experts said that such irregularities increased the risk of contamination and thus flawed the entire procedure.[61]

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[59] Hannan, C. 2009. *BBC to Blame if Amanda Knox is found guilty*. http://blogs.seatleweekly.com; last accessed on Monday 5 September 2011.

[60] Halderman, J Dough, L. 2009. *American Girl, Italian Nightmare*. http://www.cbsnews.com/stories/2009 ; last accessed on Monday 5 September 2011.

[61] Rizzo, A. 2011. Forensic Experts: *Knox trial evidence possibly contaminated*. Available at http://www.msnbc.msn.com/id/43954996/ns/world_news-europe/t/forensic-expert-knox-trial-evidence-possibly-contaminated; last accessed on Monday 5 September 2011.

They reviewed the procedures used to test the DNA material and determined the genetic quantity was below the minimum amount necessary for the test to be considered reliable, according to international standards. Knox was acquitted on appeal.

So notwithstanding the fact that DNA evidence is seen as the golden tool in criminal investigations, like any other evidence, if it is not properly handled, possible contamination can take place and this can cause unjust results. It is for this very reason that the *subject* of DNA cannot be seen as uncontested.

6.2.1 DID THE CRIME SAMPLE CONTAIN ENOUGH DNA TO PERMIT AN ACCURATE ANALYSIS?[62]

In order for a DNA sample to be interpretable, the sample must contain enough DNA of sufficiently high molecular weight to allow isolation of longer DNA fragments, which are the most susceptible to ruin (breaking into smaller fragments). Samples of blood, semen or other DNA sources may be too small to permit analysis.[63] These arguments however apply to older methods and are no longer relevant to current technologies.

Times and technology has however changed and it has been found in practice that as little as approximately 1 billionth of a gram of material is sufficient to obtain a DNA sample.[64]

Less semen or saliva than blood is needed to obtain an equivalent type, because the concentration of sperm cells in semen or epithelial cells in saliva is higher than the concentration of white blood cells in blood.[65]

Thus, the amount of DNA available does not play such a bigger role nowadays, but rather the quality presented by such evidence as this will signify the impact of the possibility of generating a DNA profile.

[62] L Meintjes-Van Der Waldt. 2010. *DNA in the Courtroom, Principles and Practice*. South Africa: Juta @ Co. Ltd.
[63] Ibid.
[64] L Meintjes-Van Der Waldt. 2010. *DNA in the Courtroom, Principles and Practice*. South Africa: Juta @ Co. Ltd.
[65] Ibid.

6.2.2 WAS THE CRIME SAMPLE OF SUFFICIENT QUALITY TO PERMIT AN ACCURATE ANALYSIS?

Exposure to heat, humidity, ultraviolet radiation and a range of chemical substances, as well as the period of exposure, can degrade the DNA sample.

Where in the past, with other DNA techniques, exposure to chemical or bacterial agents could have been said to alter the DNA by interfering with the enzymes used in the testing process, this is no longer the case.[66]

An important outcome of these studies is the finding that these environmental factors will not change DNA from one type into another; in other words, an HLADQA7 type 1,1 will not change into a 1,2, nor will an STR type change from a 5,9 to a 6,8. Rather, the degradation changes the DNA from a sample that can be typed into a sample that gives no type at all.

This is an important part of the validation of any genetic typing system because it means that the biological component of the system will not produce false positive results. With the use of STRs, the result of degradation can show up as allelic drop-out and therefore the full profile will not show up. When the random match probability is calculated, the result will be less exclusionary than one that is obtained from a full profile. For the defense to determine this, the electropherogram must be disclosed.

6.3. RANDOM MATCH PROBABILITY

According to Dr Dean Patrick Hildebrant[67] in his testimony in the case of S v Romeo Schiefer[68] trial, he stated, “when there is an indistinguishable sample, there are two explanations

[66] L Meintjes-Van Der Waldt. 2010. *DNA in the Courtroom, Principles and Practice*. South Africa: Juta @ Co. Ltd

[67] Acting Director of the British Colombia Institute of Technology Centre for Forensic and Security Technology studies- This was said during a testimony in the S v Romeo Schiefer trial.

[68] S v Romeo Schiefer. (2008). In process.

- Either they come from the same person; or
- They came from different people who happen to have the same DNA profile".

"Dr Hildebrant[69] went further by saying that "*if we get an association like this; we have to do a statistical comparison to describe the significance of this association and this can be seen as the random match probability".* This is a probability of random, which is used by a number of a given population who would have a profile of interest to this case. Therefore, in case there is a male profile that was generated we can use a number of different population data basis, to calculate how common that profile is. In theinstance where the profile is very common, it carries less weight than in the instance where the profile that is very rare".

CHAPTER SEVEN

NAMIBIAN CASE DEVELOPMENTS

7.1. State v. Romeo Schiefer[70] [Dual Murder trial]

Romeo Schiefer a young teenage male was arrested on 19 January 2008 and has since pleaded not guilty to two counts of murder and robbery with aggravating circumstances. Schiefer is being accused for the killing of both his parents Mr. Frans and Mrs. Fransiena Schiefer in their home on the evening of 18 January 2008. Schiefer has since been in police custody.

DNA that was done in Canada did however not link Romeo Schiefer to the killing of his parents according to testimony heard in court this year. Human blood was found on socks and one of the shoelaces of shoes allegedly worn by Schiefer on the night his

[69] See note 67.
[70] S v Romeo Schiefer. 2008. In process.

parents were murdered, and also on a pair of shorts found in the home of Schiefer's parents, but this blood could not be linked to either of the two murder victims.[71]

This conclusion was made according to results of DNA analysis and comparison that were carried out at the British Colombia Institute of Technology and forensic tests done at the National Forensic Science institute of Namibia, which became part of the evidence in Schiefer's trial before Judge Naomi Shivute in the High Court in Windhoek**.**

Samples collected from clothing and a pillow that were found at the crime scene where Schiefer's parents were murdered, and from Schiefer's shoes, were sent to Canada for DNA analysis and comparison.[72] However prior to that, the samples were sent for initial testing at the National Forensic Science institute in Namibia, which indicated the presence of human blood on the shorts, the pillow, socks and a shoe lace. Blood samples of both victims were also sent to Canada for DNA analysis.

In Canada it was found that no DNA could be extracted from one of the samples, understood to been that of Mrs.Schiefer. DNA extracted from the other sample, understood to be that of Mr. Schiefer, were found to match DNA found on the sample collected from the pillow. The same female DNA profile was found on the samples collected from the shorts and one of the socks, the court head. However, because no DNA could be extracted from the blood sample of Mrs. Schiefer it could not be established if that DNA profile matched Mrs. Schiefer's.On the shoelace, a mixed DNA profile of three individuals was found.None of these profiles matched the profile on the pillow, Judge Shivute was told.

Schiefer's trial continued on the 26 of July 2011 wherein his confession to the murders, were admitted as relevant evidence in court.

[71] Menges, W. (2011). "Court hears of murder victim's cry for help". The Namibian.
[72] Menges, W. (2011). "Murder Scene blood marks similar to suspect's shoe". *The Namibian.*

7.1.1. Romeo Schiefer the 0.001% not covered by the conclusiveness of DNA evidence

In criminal procedure teachings are that, accused persons need always be presumed innocent until proven guilty. Furthermore, those convictions need be proved beyond reasonable doubt. My Question is thus;

"What happens to the DNA evidence, what happens to the weigh, the value and the notion that DNA is an uncontested science if Judge Shivute convicts Schiefer"?

Do we not follow an adversarial system, where it is better to let one criminal evade justice rather than have one innocent convicted, condemned and sentenced, or do we conclude that Schiefer is the 0.001% that is not covered by the conclusiveness of DNA evidence as it is argued that DNA is 99.9% conclusive.

Furthermore will the Schiefer case be yet another great case like that of O. J Simpson (1995) that make bad law? Like the Simpson case, the Schiefer case is after a long time the first criminal trial watched, at close proximity by many and its verdict is crucial. In the Simpson case, first, the "good guys" lost and the "bad guys" won (at least in the eyes of most Americans).[73] Will this perhaps be the outcome of the Schiefer trial?

7.2. S v Shipanga and Another (2010) NAHC 38

7.2.1. DNA evidence is 99.9% Conclusive

The two men convicted of murdering German tourist Johannes Fellinger on the first day of his visit to Namibia in July 2007 were each sentenced to a 46-year prison term on 14 June 2011.[74] Former police officer Fanuel Festus Shipanga (41) and a co-accused, Paulus Kamati (30) were the accused persons in the said case.

The DNA evidence in the Shipanga case proved once again the accuracy of the science underlying DNA as well as the ability of the science to put an end to the trial. The DNA evidence in the Shipanga case proved beyond a reasonable doubt that accused no. 1

[73] Dershowitz, A, M. 1996. *Reasonable Doubts.* New York: Simon & Shuster Inc, pp 196-197.
[74] Megers, W. 2011. Heavy jail terms in tourist murder case. *The Namibian*.

was the one who shot the deceased, (Mr Fellinger) as testified to by the deceased's wife as accused no1. was in close contact with the deceased.

Thus the science underlying DNA evidence is a vital part in criminal trials today and should thus be handled with extra care, so as to avoid any possibilities of contamination and thereby avoiding flawed results.

7.3. Magdelena Stoffels[75]

7.3.1. Is DNA defeating the course of justice; [OR] are the police too quick to grab a suspect?

In the recent case of Magdelena Stoffels the withdrawal of the rape and murder charges shocked the nation. Fillipus Junias[76] was the only man arrested in connection with the fierce crime that took place on 27 July 2010.

Magdelena Stoffels, a 17-year-old schoolgirl was found brutally raped and murdered in a riverbed near David Bezuidenhout High School. The accused was arrested on the same day the crimes took place.[77] The accused remained in custody ever since and only regained his freedom nine and a half months later,[78] due to the existence of biological evidence, which was subjected to DNA testing. The DNA sample- a sample of semen/sperm cells- extracted from Magdalena's body and examined in Canada did not match the DNA of he accused as well as other evidence found at the scene of the crime. This resulted in the prompt withdrawal of the charges against the accused on Friday the 13th of May 2011 due to a lack of evidence to link the accused to the attack.

The issues:

(i) Is DNA evidence defeating the course of justice in that the police are too quick to grab a suspect; or

[75] Magdelena Stoffls case. 2011. In process.
[76] Hereinafter referred to as the accused. The police apprehended the accused on the strength of the fact that he was found approximately 300 to 500 meters from the scene of the crime on the day of the incident.
[77] Menges, W. (2011). " Charges over shock murder withdrawn". *The Namibian*, p 1. *May 16.*
[78] Ibid.

(ii) Can one argue that the real accomplice's to crimes in Namibia is the lawmakers with their unfailing ability to pass DNA legislation that we so desperately need?

7.3.2 Is DNA evidence defeating the course of justice in that the police are too quick to grab a suspect and then stopping or neglecting the investigation?

Justice is a concept of moral rightness based on ethics, rationality, law, natural law, religion, fairness, or equity, along with the punishment of the breach of said ethics.[79] The adversarial system is a two-sided system under which criminal trial courts operate that pits the prosecution against the defense. Justice is done when the most effective adversary is able to convince the judge or jury that his or her perspective on the case is the correct one.[80] Justice thus demands an end to the trial.

With reference to the case of Magdelena Stoffells, one cannot ignore the fact that the investigation stopped almost immediately after a suspect was brought to light. The crime scene area was cleared, thus possible evidence demolished and nine months later the only man arrested in connection with the fierce crime is acquitted due to a lack of evidence to link the accused to the attack. The questions thus remain?

Do the police have the laws they need to do the job? Alternatively, are the laws and especially the courts' constitutional interpretations actually making things unnecessarily difficult, leading to the release of dangerous felons for no apparent good reason? Are juries competent for the critical task assigned to them? Can they recognize the truth in the tangle of evidence? How well are they served by the rules that filter the data provided to them? What is the value of lawyers to the process? Do they contribute anything of value? Like shielding the innocent from unjust conviction or keeping the government honest? Or do they simply hinder the important and primary task of law enforcement by removing the predators from their victims? How do prosecutors fit into the equation? Are they choosing targets wisely, are they focusing law enforcement

[79] www.wikipedia.org/wikki/justice. Accessed 1 August 2011
[80] www.wikepedia.org/../adversarial/system, last accessed on 1 August 2011.

attention where it is most sorely needed? Alternatively, are they with the convenience of the court, selling out justice in the plea bargaining process whilst inducing the innocent to plead guilty? Finally, where do trial judges fit into our peculiar adversary system of criminal justice? Are they effective, empowered figures who guide the process toward a just outcome, or does the adversary system induce a sort of judicial passivity that allow lawyers and juniors to take the process on excursions to Disney World, far from the realms of truth? Uviller, H, R. 1996. Virtual Justice; *The Flawed Prosecution of Crime in America*. London: Yale University Press, p xi.

The answer is thus is to be found in the question as to whether there really is justice in the justice system or is it just maneuvered to fit the needs of those involved.

Who do we blame now? Our system or;

Can we argue that the real accomplice's to crimes with specific reference to Namibia is the lawmakers with their unfailing ability to pass DNA legislation that we so desperately need?

As stated right in the beginning of this paper, when one talks of DNA evidence, the case is closed. DNA evidence is seen to be the cold hit technology that will solve the crime at the end of the episode. The inquiry now is, "if DNA evidence presents such a valuable tool in criminal investigations, why it is that, Namibian lawmakers are failing to pass legislation to obtain such evidence more freely. Furthermore, why is it that all DNA evidence is send to Canada for analysis?

CHAPTER EIGHT

8.1 CONCLUSION

In conclusion, DNA is a well-known subject of evidence in both criminal and civil law cases. DNA evidence is seen to be the cold-hit technology that adds a face to criminal acts in countries all over the world. This paper however, not only acknowledges the

ability of the science per se, but it outlines the controversies that that come with the subject of admitting such evidence in criminal courts. It clearly outlines and aims to educate especially those in the legal profession of the possible flaws that can come with the admittance of such evidence in criminal courts.

The basic concept of law is the idea of justice. This is however, so often forgotten and the failure to uphold the concept of justice may lead to regrettable errors. Justice is a legal concept however ethical to. In order to uphold the law, justice need to prevail as law is rather impossible without a well-conceived idea of justice.

It is thus crucial that lawmakers realize that in as much as DNA can prove a case and bring justice it can also result in an injustice. Thus, the controversies that surround the admittance of DNA evidence in criminal courts need always be held in mind, in order to assure that justice prevails at all times. It is crucial that the notion that DNA is the Be-it evidence be abolished and that reference be made to the possible controversies that can come with the admittance such evidence in criminal courts. It is more so essentially vital that the ordinary rules of evidence and criminal law be not forgotten and that the basic concept of law remains the idea of justice.

8.2 RECOMMENDATIONS

Many people would agree that the present system of crime control is ineffective. They however, become terror-struck when they hear someone doubting the effectiveness of the disciplinary criminal justice, let alone its abolition. As long as these fears exist, any reform of the system will meet the strongest resistance and make it unworkable.

All Namibian criminal cases that have DNA evidence as the Crux of the evidence is send to Canada for analysis. This is economically exhausting and unreasonable. DNA evidence play a vital role in the criminal justice system today and it is thus impractical not to have proper resources available on a domestic level to examine such evidence.

Furthermore, the Namibian system lacks proper laws to govern the admittance of DNA evidence in criminal courts and thus, it is recommended that legislation be put in place

to guide the said process. Setting up a National Databank is also recommended for all those countries not yet practicing it. These banks hold the profiles of previously convicted offenders, crime scene profiles and arrestees who have not yet been convicted.

Perceived advantages and disadvantages of DNA National Databases as outlined in the book of Meintjies-Van Der Walt, L. (2010) *DNA in the Courtroom; Principles and Practice.* Juta &Co.Ltd, at p 18 as follows:

Advantages	**Disadvantages**
A useful intelligence tool in: • Identifying links between samples • Enabling those who have been previously convicted to be rapidly identified and recaptured • Allowing rapid exclusion from investigation of those who already are on the database and of the innocent • Identifying missing persons and unidentified human remains	• Unlawful use of the information contained in the genetic sample that can invade a person's human rights. • Unnecessary long periods of detention of physical samples, including those of persons merely arrested and not prosecuted. • The possible inaccuracy of a hit found through a DNA database and the possibility of a false match.

Another important concept namely, Familial DNA searching should also not be ignored as another method to help solve the crime. Familial DNA is a process by which an unidentified DNA profile is run through the state's DNA data-bank looking not for an exact match but for a close match that would identify a family member of an unidentified perpetrator that could point in the direction of potential suspects[81]. Familial Searching for criminal intelligence as well as the identification of unidentified bodies is being used in more and more countries throughout the world.

[81] Bhattacharya S. 2004. *Killer convicted thanks to relatives DNA.* http://www.newsscientistic.com/article/dna4908-killer-convicted-thanks-to-relatives-dna.html; last accessed on Thursday 22 September 2011.

In those countries where Familial Searching is allowed, it is important to remember that searches are only conducted on the National DNA Databanks which hold the profiles of previously convicted offenders, crime scene profiles and arrestees who have not yet been convicted. Furthermore, a 'hit' when conducting a familial search, does not mean that that person is the suspect – it is simply an investigative lead, which may lead the police to the actual suspect who committed the crime.

A DNA Database for Criminal Intelligence is NOT a population database – in other words, it is a database containing profiles of crime scene samples and convicted offenders & arrestees and not the general population. A familial search on a National DNA Database will therefore extend the size and reach of the DNA database to effectively include the parents, children and siblings of the offenders and arrestees whose DNA profiles are already stored in databases.

"Familial searching" is being used in some countries for efficient identification of possible crime suspects when traditional investigative efforts fail. Familial searching will generally be used in investigations, and not the courtroom. [82]Crime laboratories benefit from searching not just for perfect matches, but also for close ones, when trying to connect DNA from unsolved crimes to the DNA of known offenders whose DNA profiles are held in a national database. Because relatives share common DNA profiles, close matches can implicate family members as possible crime suspects.

The first familial search was done in Great Britain in which the suspect was apprehended and convicted of the crime.[83]

"In the early morning hours on March 21, 2003, Mr. Michael Little, a 53-year-old truck driver, was driving his truck on a highway in Surrey, when he drove beneath an overpass. A brick was thrown from the overpass and crashed through his windshield. It

[82] Lazer , D. 2002-2007. *The use of Familial DNA searching in criminal investigations.* http://www.hks.harvard,edu/var/ezp_site/storage/fckeditor/file/pdf/centres-programs/centres/rapport/powerpoints/lazer_dna.pdf ; last accessed on Thursday 22 September 2011.

[83] Bhattacharya S. 2004. *Killer convicted thanks to relatives DNA.* http://www.newsscientistic.com/article/dna4908-killer-convicted-thanks-to-relatives-dna.html; last accessed on Thursday 22 September 2011.

hit Mr. Little in his chest and caused fatal damage to the heart. Before Mr. Little died, he was able to bring his truck to a stop on the side of the road.

Law enforcement analyzed the blood on the brick and found two DNA profiles, one of Mr. Little and one of another unknown individual. That evening, before the brick was thrown from the overpass, a car had been burglarized in the same town. The burglar could not get the car started and he left his blood at the scene.

The police were able to extract a full DNA profile and it matched the DNA profile on the brick which killed Mr. Little. The profile was run through the DNA Database, but no match was found.

However, the DNA analysis established that the offender was caucasian. A police profiler looked at the details of the crime, and suggested that he was under the age of 35. Also, Surrey police believed the killer lived locally and so authorities performed a DNA dragnet screen involving 350 people from the surrounding area who volunteered to give samples. But still no match was found.

Law enforcement then decided to perform a familial search of white males under the age of 35 living in Surrey or Hampshire. Twenty-five people with similar DNA were located including a relative of the suspect whose DNA matched 16 of 20 DNA markers. They interviewed the relative and discovered that he had a 19-year-old brother, Craig Harman, who lived where the crime had occurred. Harman gave his DNA voluntarily and confessed. In April, 2004, Craig Harman pleaded guilty to manslaughter and was sentenced to 6 years". Bhattacharya S. 2004. *Killer convicted thanks to relatives DNA.* http://www.newsscientistic.com/article/dna4908-killer-convicted-thanks-to-relatives-dna.html; last accessed on Thursday 22 September 2011.

Familial searching in Namibia can wipe out some controversies that are brought forth by the admittance of DNA evidence.

Furthermore with reference to the Namibian policing system it is recommended that the police conduct proper investigations so as to avoid any mishaps in the justice system.

CHAPTER 9

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