

DILEMMAS OF SCIENCE AND THE CRIMINAL LAW: A SOUTH AFRICAN PERSPECTIVE

Jo-Mari Visser
BSc BSc Hon MSc LLB
Research Fellow
Department of Criminal and Medical Law
University of the Free State

Hennie Oosthuizen
Bluris LLB LLD LLD
Professor and Head
Department of Criminal and Medical Law
University of the Free State

SUMMARY

In light of the 85.9% conviction rate reported by the National Prosecuting Authority for the year 2007/2008, one would expect crime in South Africa to be comparatively under control. However, with only 11% of all reported cases of murder resulting in convictions in this country, it becomes clear that crime is still a very real threat to the Constitutional freedom of its citizens. This article explores the problems encountered in the harvesting, processing and presentation of expert scientific evidence in our criminal courts. The court ruling in *S v Van der Vyver 2008 JOL 21332 C* is analysed and presents an interesting example of the erroneous use of science in the criminal justice system. A comparative study is undertaken to illustrate further the extent of the problems inherent in the use of science within the criminal justice system and probe possible solutions. The use of scientific evidence in the jurisdictions of England/Wales and the United States of America are used as a focus for the comparative studies.

1 INTRODUCTION

In the 2002/2003 financial year of the South African Police Service (SAPS), a total of 2 629 137 serious crimes were reported to the police. In the 2006/2007 financial year, 2 125 227 serious crimes were reported. This amounts to a 20% decrease in the rate of crime reporting over a period of four years.¹ In 2007/2008 approximately 2 036 151 serious offences were

¹ Burger "Time to Take Action. The 2006/07 Crime Statistics" 2007 21 *SA Crime Quarterly* 2.

reported to the SAPS.² In addition to this the National Prosecuting Authority (NPA), responsible for prosecuting crime in South Africa, reported an 85.8% conviction rate of crimes in the 2006/2007 year³ and an 85.9% conviction rate in the 2007/2008 financial year.⁴

This might seem to justify optimism on the criminal justice front, as it appears on the face of it that the problem of crime in our country is well on its way to being under control. However, upon closer inspection it becomes clear that the true state of affairs is much more perturbing than first meets the eye.

However, on closer examination it appears that these impressive conviction rates only represent those cases that actually go to trial. In other words, those cases in which sufficient admissible evidence was harvested to persuade the National Prosecuting Authority to institute prosecution. Approximately 55% of reported serious crimes never make it to court due largely to the fact that inadequate evidence failed to identify a suspect.⁵ These statistics expose a disturbing problem. The vast amount of possible scientific evidence potentially available on crime scenes, victims and offenders are not being identified adequately, analysed and interpreted to render a case ready for prosecution.

In reported cases of murder, specifically, it was discovered that in South Africa a mere 11% resulted in convictions as compared with the 49% conviction rate of murder in the United States of America and 56% in England and Wales.⁶

It seems likely that the explanation behind South Africa's low conviction rates includes the overexertion of detectives and prosecutors, inadequate resources, understaffing, and low levels of morale within the sphere of the criminal justice system.⁷ It is imperative that policing and prosecution in South Africa be reconsidered with regard to *inter alia* the focus of its resources, training and areas of specialization, so that effective and pragmatic changes may be made.

How are convictions obtained? Essentially it is the result of a process of persuading the presiding officer that the accused person is guilty of the charges against him. During this process of persuasion all reasonable doubts as to the guilt of the accused are required to be eliminated. The guilt of the accused must be the only reasonable and logical inference to be made by the trier of fact. Inferences may be drawn from evidence placed before court, whether it is in the form of oral evidence, documentary evidence, electronic or machine generated evidence or real evidence. However, with the turn of the previous century came an increase in focusing

² South African Police Service "Crime Statistics: Summary" http://www.saps.gov.za/statistics/reports/crimestats/2008/crime_stats.htm (accessed 26 June 2009).

³ National Prosecuting Authority "Annual Report 2006/2007" www.npa.gov.za (accessed 7 July 2008).

⁴ National Prosecuting Authority "Annual Report 2007/2008" www.npa.gov.za (accessed 26 June 2009).

⁵ Van Zyl Smit "Conviction Rates of Crimes Reported in Eight South African Police Areas" 2000 *SALC Report Paper 18, Project 82* 16.

⁶ Van Zyl Smit 2000 *SALC Report Paper 18, Project 82* 22.

⁷ Van Zyl Smit 2000 *SALC Report Paper 18, Project 82* 26.

on inferences flowing from real evidence obtained by the application of natural science.⁸ It is thus essential that courts, prosecutors, police, and other law enforcement personnel alike, are aware of the potential of forensic science to assist in the achievement of justice, as well as the pitfalls associated therewith.

This discussion will attempt to demonstrate some of the problems and inadequacies of the criminal justice system manifesting in the current conviction rate, as well as considering possible remedies for these problems. A comparative analysis between the operating procedures in South Africa in terms of the harvesting of evidence, and those of foreign jurisdictions, primarily focusing on England and Wales and the United States of America, will be performed. This will include an investigation into the policies employed by the SAPS and specifically the NPA with regard to real evidence and its procurement.

2 IDENTIFYING THE PROBLEM

2.1 Introduction

The responsibility of ensuring justice and solving crime does not belong to one department or branch of government exclusively, but rather weaves through all relevant parties like a golden thread. The performance of one sector of the criminal justice system closely relates to the performance of another.⁹

Before entering into a discussion of the problems that have presented themselves in each of the different factions of law enforcement, it is necessary to examine a court ruling in recent South African legal history that serves as an illustration of the inability of science and law to meet. The case of *S v Van der Vyver*¹⁰ is a perspicuous warning of the chasm that may exist between the scientific investigation of crime and legal principles.

2.2 Anatomy of a problem: *S v van der Vyver*¹¹

Dilemmas relating to expert evidence have often been encountered in the criminal justice system,¹² but nowhere has the fracture between law and science manifested itself more visibly than in the high profile case of *S v Van der Vyver*.¹³ The accused, charged with the brutal murder of his girlfriend in her apartment, was arrested and taken to trial after a comprehensive investigation by the South African Police Service.

The prosecution had an arsenal of evidence at its disposal, which included: a singular blood mark on the floor of the victim's guest bathroom,

⁸ Van Zyl Smit 2000 *SALC Report Paper 18, Project 82* 26.

⁹ Schonteich "Tough Choices: Prioritising Criminal Justice Policies" 2002 Occasional Paper No 56 *Institute for Security Studies*.

¹⁰ 2008 JOL 21332 C.

¹¹ *Ibid.*

¹² *S v Maqhina* 2001 1 SACR 241 T.

¹³ 2008 JOL 21332 C.

an ornamental hammer discovered in the vehicle of the suspect (alleged to be the murder weapon), and the suspect's fingerprint obtained from a DVD case found in the victim's apartment.¹⁴ Though circumstantial in nature, the evidence at first glance, seemed to possess substantial evidentiary value.

- *Blood mark on bathroom floor*

The first forensics expert from the South African Police Service (SAPS) testified that the blood mark on the victim's guest bathroom floor was deposited by a bloody shoe belonging to the accused. He submitted in his affidavit, compiled in accordance with section 212(4)(a) and 212(8)(a) of the Criminal Procedure Act,¹⁵ that the blood mark possessed class and unique characteristics¹⁶ that corresponded with the accused's shoes.¹⁷ In his

¹⁴ *S v Van der Vyver supra* par 4.

¹⁵ 51 of 1977.

"Section 212(4)(a):

(4)(a) Whenever any fact established by any examination or process requiring any skill –

(i) in biology, chemistry, physics, astronomy, geography or geology; ...

(v) in biochemistry, in metallurgy, in microscopy, in any branch of pathology or in toxicology;

is or may become relevant to the issue at criminal proceedings, a document purporting to be an affidavit made by a person who in that affidavit alleges that he or she is in the service of the State or of a provincial administration or is in the service of or is attached to the South African Institute for Medical Research or any university in the Republic or any other body designated by the Minister for the purposes of this subsection by notice in the *Gazette*, and that he or she has established such fact by means of such an examination or process, shall, upon its mere production at such proceedings be *prima facie* proof of such fact: Provided that the person who may make such affidavit may, in any case in which skill is required in chemistry, anatomy or pathology, issue a certificate in lieu of such affidavit, in which event the provisions of this paragraph shall *mutatis mutandis* apply with reference to such certificate.

Section 212(8)(a):

(8)(a) In criminal proceedings in which the receipt, custody, packing, marking, delivery or despatch of any finger-print or palm-print, article of clothing, specimen, tissue (as defined in Act section 1 of the Anatomical Donations and Post-Mortem Examinations Act, 1970 (Act 24 of 1970)), or any object of whatever nature is relevant to the issue, a document purporting to be an affidavit made by a person who in that affidavit alleges –

(i) that he is in the service of the State or is in the service of or is attached to the South African Institute for Medical Research, any university in the Republic or anybody designated by the Minister under subsection (4);

(ii) that he in the performance of his official duties

(cc) during a period specified in the affidavit, had a finger-print or palm-print, article of clothing, specimen, tissue or object described in the affidavit in his custody in the manner described in the affidavit, which was packed or marked in the manner described in the affidavit,

shall, upon the mere production thereof at such proceedings, be *prima facie* proof of the matter so alleged: Provided that the person who may make such affidavit in any case relating to any article of clothing, specimen or tissue, may issue a certificate in lieu of such affidavit, in which event the provisions of this paragraph shall *mutatis mutandis* apply with reference to such certificate."

¹⁶ Geberth *Practical Homicide Investigation: Tactics, Procedures and Forensic Techniques* 4ed (2006) 573 "Class characteristics refer to those features that *cannot* be forensically assigned to a specific source to the exclusion of all others, for example, analysis of the

affidavit, the expert stated that he had submitted this evidence to an international expert in the domain of shoe prints, one Bill Bodziak. He claimed that the latter irrefutably confirmed his conclusion that it was indeed the accused's shoe that deposited the blood mark in the victim's house, thereby placing the accused in the victim's apartment around the time of the murder.¹⁸

The testimony of the State's shoe print expert quickly fell into disrepute when Bodziak, who had allegedly confirmed the state's evidence, expressed in his correspondence with the defence that he was "shocked and amazed at the number of lies contained in that report".¹⁹ Bodziak proceeded to testify for the defence that, though the SAPS expert did indeed submit the evidence to him, he never agreed with the conclusions drawn by the local expert. He further asserted that subsequent to his own analysis of the shoe, he could only come to the conclusion that the accused's shoe could *not* have been the conveyer of the blood mark.²⁰

In addition to Bodziak's evidence, counsel for the defence submitted testimony of two additional experts in the domain of identification forensics, both of whom asserted that the blood mark evidence was flawed.²¹ In fact, one of these experts submitted the following in his report to the court:

"It is my expert opinion that this court chart is a misrepresentation of the scientific facts of this examination and a blatant attempt to convince the courts to the contrary. Any attempt by Supt. Bartholomew or the South African Police Services to perpetuate this erroneous and fabricated conclusion shall be considered unethical by the international forensic science community. There is no consistency whatsoever between the two images depicted in this chart."²²

The court expressly rejected the testimony of the prosecution's shoe print witness, calling it "unreliable".²³ Judge Van Zyl criticized this evidence, specifically the fact that the SAPS expert falsified his report and blatantly misdirected the court with regard to its contents.²⁴ Furthermore, the court held that, while the forensic experts for the defence inferred facts in strict accordance with widely accepted scientific standards, the state forensic expert did not base his findings on either science or logic.²⁵

morphology of hair may reveal racial origin, but will not point to one individual." "Unique or individualistic characteristics can be identified forensically to one source to the exclusion of all others, for example, latent fingerprints can be attributed to a specific individual."

¹⁷ *S v Van der Vyver supra* par 68.

¹⁸ *S v Van der Vyver supra* par 71.

¹⁹ "Judge Slams Crime Scene Chaos" 12 March 2007 *News24* http://www.news24.com/News24/South_Africa/News/0,,2-7-1442_2082599,00.html (accessed 2008-06-18).

²⁰ *S v Van der Vyver supra* par 72-78.

²¹ *S v Van der Vyver supra* par 79-82.

²² "Certificate of Re-examination Supplement" 5 February 2007 <http://www.clpex.com/Articles/TheDetail/300-399/TheDetail331.htm> (accessed 2008-08-22).

²³ *S v Van der Vyver supra* par 83.

²⁴ *Ibid.*

²⁵ *S v Van der Vyver supra* par 84.

- *Ornamental hammer*

The matter of the ornamental hammer as a possible murder weapon ignited controversy and provoked some to label it “farcical”.²⁶ The hammer, property of the accused, was allegedly employed to inflict the fatal blunt force trauma the victim sustained. The State called upon a ballistics expert from the Forensic Science Laboratory to scientifically prove this allegation by using the hammer in a reconstruction of the event. In recreating blunt force wounds in the carcasses of dead animals, the ballistics expert asserted that those wounds (created by the ornamental hammer during the reconstruction) were analogous to the wounds suffered by the victim and could thus be said to have caused the victim’s wounds.²⁷

A golden rule of expert testimony is that experts should avoid the temptation of expressing an opinion on an issue which falls outside the realm of his/her expertise.²⁸ In the circumstances of the Van der Vyver case one cannot help but wonder why a ballistics expert was called upon to render an opinion on wound anatomy and creation. Though his knowledge was not contested, the opinion of a medical doctor or pathologist seems more in line with satisfying the requirement of expertise, as laid down for expert witnesses in South Africa.²⁹ In fact, counsel for the defence procured the testimony of a distinguished forensic pathologist, who placed the opinion of the state’s ballistics expert in a very poor light indeed.³⁰

Another vital forensic principle that seemed to be wholly disregarded by the state’s expert was the method of photography employed. In taking forensic photographs the camera should always be aimed at an angle perpendicular to the object being photographed.³¹ The state expert neglected to comply with this requirement, thereby creating significant distortion in the photographs in terms of the sizes of the wounds. Subsequently, he performed demonstrations that erroneously showed the hammer corresponding with the wounds of the deceased.³²

The court in this case rejected the evidence submitted by this expert witness. In addition to the obvious absence of a medical and scientific basis for the expert’s inferences, the court found it dubious that he neglected to mention that the tests performed were in fact carried out with a hammer *other than* the ornamental hammer in question.³³ It was clearly visible from a video recording of the experiments that, after the expert performed the first

²⁶ “‘Hammer Murder’ that Wasn’t” 5 December 2007 *The Times* <http://www.thetimes.co.za/News/Article.aspx?id=649531> (accessed 2008-07-19).

²⁷ *S v Van der Vyver supra* par 94.

²⁸ Hiss, Freund and Kahana “The Forensic Expert Witness – An Issue of Competency” 2007 168(2/3) *Forensic Science International* 94.

²⁹ Schwikkard and Van der Merwe *Principles of Evidence* (2002) 92. The relevant requirement here is that the expert in question must be an *expert* for the purposes for which he/she was called upon to testify.

³⁰ *S v Van der Vyver supra* par 109.

³¹ Watt “Expert Working Group on Standardized Photography Training (EWGSPT). INTERPOL” <http://www.interpol.int/Public/Forensic/fingerprints/WorkingParties/EWGSPT/ewgspt.pdf> (accessed 2008-07-19).

³² See fn 26 above.

³³ *S v Van der Vyver supra* par 99.

blow to an animal carcass to recreate the victim's wounds, the ornamental hammer bent to such a degree that no other experiments could be performed with it. If this hammer became completely distorted with one violent blow, it is inconceivable that it could have been used to inflict such repeated violent injuries to the victim.³⁴

- *Tooth marks*

At the annual conference of the International Association of Identification in Louisville, Kentucky in August 2008, Michael Grimm, an independent forensic consultant, delivered a presentation in which he postulated that the wounds the victim sustained in this case were most likely inflicted by a handgun. Astonishingly, he also indicated wounds on the victim's chest that appeared to be tooth marks and an area of excised skin, possibly where the perpetrator attempted to remove his tooth mark evidence.³⁵ No such evidence was provided during the trial by the local district surgeon who performed the post-mortem on the deceased. This is a great loss of possible evidence since the tooth marks may have yielded DNA-containing biological material belonging to the perpetrator that is now lost to decomposition.

- *Fingerprint*

The most highly regarded of the State's evidence came in the form of a fingerprint belonging to the accused that was apparently obtained from a DVD case in the victim's apartment, thereby placing the accused in the victim's apartment on the afternoon of the murder. During cross-examination the police officer responsible for lifting the fingerprint from the DVD case conceded that he did not strictly follow protocol on the given day.³⁶ In attempting to justify the deviation from protocol, the police officer submitted that he intentionally failed to follow standard operating procedures due to the seriousness of the case.³⁷ This is a serious misapprehension, as crime scene protocols serve as verification of the reliability of crime scene techniques and investigations and should be adhered to.³⁸ The importance of following standard protocol when collecting and analysing forensic evidence was emphasised in *S v Maqhina*.³⁹

In addition to this deviation from standard procedures, the evidentiary value of the fingerprint in question was further eroded by the expert opinions of two internationally renowned fingerprint specialists testifying for the defence. Both these experts testified that, due to certain features of the fingerprint as well as the presence of a lip print near the latent print, it could not be said to have been lifted from the DVD case, but most likely came from a wine glass in the apartment. This fully corresponded with the accused's

³⁴ *Ibid.*

³⁵ Personal communication via e-mail: Mr P Wertheim on 24 August 2008.

³⁶ "Police 'Did not Follow Protocol'" 5 March 2007 *Cape Times*; and *S v Van der Vyver supra* par 134-135.

³⁷ "Police 'Did not Follow Protocol'" 5 March 2007 *Cape Times*.

³⁸ Barksdale "Crime Scene Investigation Protocol" 2004 www.neiai.org/index.php?option=com_docman&task=doc_download&gid=12&Itemid=54 (accessed 2008-08-15).

³⁹ 2001 1 SACR 241 T.

assertion that he had in fact been in the victim's residence on a previous occasion, when the victim had still been unharmed.⁴⁰ This presence of this fingerprint therefore had no evidential value. The fingerprint experts also expressed the opinion that the manipulation of the fingerprint evidence was intentional and not a result of negligence or incompetence.⁴¹ In fact, one of the defence's experts, Pat Wertheim, an independent United States-based forensic scientist, pertinently stated in his report that not only were the findings in the fingerprint analyses inconsistent with scientific principles, but that this evidence was "intentionally" fabricated evidence.⁴²

As a consequence, all the real evidence gathered in this case was rejected by the court and the accused was acquitted of all wrongdoing. In fact, the Honourable Judge Van Zyl not only criticized the forensic work in this case as the shoddiest he had ever seen,⁴³ but also pertinently questioned whether sufficient grounds existed to initiate prosecution against the accused to begin with.⁴⁴

This case has been labelled South Africa's "forensic mess of the millennium".⁴⁵ A respected forensic expert is quoted as saying:

"For the sake of our science, we must remain vigilant and keep this case in the forefront until true justice is achieved."⁴⁶

2 2 1 Problems with expert witnesses

The problems pertaining to expert evidence as revealed in the above-mentioned case have placed new focus on the subject. It is predicted that the acquisition of expert testimony to assist the defence, as was the case in *S v Huma*,⁴⁷ and especially the success of the defence's experts in *S v Van der Vyver*,⁴⁸ is to generate a trend whereby counsel for the defence will increasingly look to forensic specialists and scientists to negate the testimony of State experts from the FSL. To lead, interpret and argue such testimony will require the defence counsel to become more informed in the specific domain of forensic science. In order for the prosecution to discredit such testimony would in turn require prosecutors to become greatly familiar with at least the basic premises of forensic science.

In addition to the requirement that prosecutors obtain some scientific knowledge, it is vital that they are cognisant of the admissibility or

⁴⁰ *S v van der Vyver supra* par 123.

⁴¹ Wertheim "Van der Vyver Report 2006" <http://www.clpex.com/Articles/TheDetail/300-399/TheDetail330.htm> (accessed 2008-08-22); and *S v Van der Vyver supra* par 126.

⁴² Wertheim "Van der Vyver Report 2006" <http://www.clpex.com/Articles/TheDetail/300-399/TheDetail330.htm> (accessed 2008-08-22); and "Investigators Tampered with Lotz Evidence" 10 January 2007 *The Cape Times*.

⁴³ Benjamin "Evidence 'Ruined at Crime Scene'" *Business Day* <http://www.businessday.co.za/Articles/TarkArticle.aspx?ID=3238687> (accessed 2008-06-27).

⁴⁴ *S v van der Vyver supra* par 184.

⁴⁵ Complete Latent Print Examination – Forum 2008 "Evidence Fabrication in South Africa" <http://www.clpex.com/phpBB/viewtopic.php?t=756> (accessed 2008-07-19).

⁴⁶ *Ibid.*

⁴⁷ 1995 2 SACR 407 W.

⁴⁸ *S v van der Vyver supra*.

inadmissibility of expert evidence. Expert testimony is deemed admissible if it consists of an opinion delivered by someone who – by virtue of their education and/or experience – has acquired skill and knowledge in a particular subject matter to the extent that they may assist the court in ascertaining the truth.⁴⁹ In training future prosecutors the NPA has included in its *Study guide – Entry examination: Aspirant prosecutor programme*⁵⁰ a concise section on the admissibility of expert evidence.⁵¹ The information provided in this particular section should, however, be supplemented with additional and definitive data, not only to provide the prospective prosecutor with clear knowledge of what scientific evidence will be admissible, but also what its probative value in a case will be.

Another point of contention pertaining to expert witnesses is the employment of these witnesses in the adversarial system⁵² as is found in South Africa. This system requires the expert witness to observe strict standards of objectivity if called to testify in favour of a particular party's case.⁵³ However, Meintjes-Van der Walt⁵⁴ identified the potential of expert testimony to be biased in the adversarial system. To add to this point, it must be kept in mind that the forensic experts employed at the FSL are indeed employed as such under the *South African Police Services Act*⁵⁵ and care should be taken that evidence is not interpreted with the aim of aiding the employer, which would ultimately result in a "forensic mess", as was the case in the *Van der Vyver* case.

2.3 Difficulties at the crime scene

It has been reported that 60% of evidence submitted to the Forensic Science Laboratory is rendered unusable at the crime scene due to poor evidence collection.⁵⁶ A study by the Institute for Security Studies⁵⁷ found that of 42 000 cases submitted to the biology unit of the Forensic Science Laboratory for DNA analysis, about 25 200 ruined samples could not be

⁴⁹ Hiss, Freund and Kahana 2007 168(2/3) *Forensic Science International* 89; and *S v Gouws* 1967 4 SA 527 C.

⁵⁰ NPA (2006) 67-68.

⁵¹ NPA (2006) 68. Regulations regarding expert witnesses include: "An expert witness must be competent to testify, i.e. must either have personal knowledge or experience in the special field in which he/she is testifying or must rely on knowledge or experience of others who themselves are acceptable experts in that field." "There must be grounds upon which the opinion is based." "In scientific analyses, e.g. DNA-evidence, the testing process, including the control measures applied, has to be executed and recorded with such care that at any time later it can be verified by any objective scientist, and eventually also the trial court." "The expert should not give an opinion on the legal or general merits of the case. This is the function of the court."

⁵² Schwikkard and Van der Merwe 9. In this system the opposing parties are responsible for presenting evidence in support of their own cases, mostly by way of oral evidence and cross-examination of the opposition's witnesses for the purpose of discrediting such witnesses.

⁵³ Schwikkard and Van der Merwe 96.

⁵⁴ "*S v Huma* (1) 1995 2 SACR 407(W). Shooting at Science: Expert Evidence and Equality of Arms" 1996 9(3) *South African Journal of Criminal Justice* 362.

⁵⁵ Act 68 of 1995.

⁵⁶ See fn 43 above.

⁵⁷ *Ibid.*

analysed due to faulty evidence collection from the scene of the crime. Distressing statistics indeed, especially in light of the fact that an estimated 80% of the success of crime resolution depends on evidence collected from the scene.⁵⁸

In the last decade reports have been rampant about the police's seeming inability to harvest reliable evidence from crime scenes. This has a detrimental effect on crime resolution, as insufficient evidence is available for the prosecution to prove facts in our criminal courts. This accounts for the high percentage of crimes never being prosecuted.⁵⁹

Anecdotal evidence appears to confirm police incompetence in this area. Incidents have been reported of police and forensics personnel leaving murder scenes within a few hours instead of perusing the area for days, which would be expected in most cases of homicide.⁶⁰ In another case, a rape victim's brother collected underwear from the scene of his own sister's rape after the police neglected to do so,⁶¹ and in yet another case, a murder victim's body was never transported to a mortuary for vital post-mortem investigation.⁶²

In 2001 a section head of a Criminal Record Centre admitted that field officers, responsible for harvesting all possible evidence from crime scenes and submitting it to the Criminal Record Centre and Forensic Science Laboratory, lacked training and advanced forensic science skills.⁶³ He further conceded that very little time was spent perusing crime scenes, as only half of his office was properly trained and the sheer volume of scenes demanded accelerated investigation.⁶⁴

In 2008 the Deputy Minister of Justice in South Africa, Johnny de Lange, admitted in parliament that half of the estimated two million crime scenes requiring analysis annually are never attended by forensic experts, simply because there are not enough trained experts to do the work.⁶⁵

It is sometimes neglected that the human body, especially the *living* human body, is the primary crime scene where a violent crime has been perpetrated. The Sexual Assault Evidence Collection Kits were developed to facilitate the collection of samples from different parts of the body of a sexual assault victim. Examining physicians need only complete the included form and employ the different tools to provide the Forensic Science Laboratory with a relative broad spectrum of possible DNA sources. However, research has shown that medical practitioners are not collecting specimens required

⁵⁸ "Pa Skryf Gids na Dubbelmoord" 25 February 2007 *Rapport*.

⁵⁹ Van Zyl Smit 2000 *SALC Report Paper 18, Project 82* 16.

⁶⁰ See fn 58 above.

⁶¹ "'Vrot' Polisie Laat Haar Nou Weer Ly" 15 July 2007 *Rapport*.

⁶² "Why Did the Police Fail Us?" 29 May 2006 *Natal Witness*.

⁶³ "Forensic Police Work 'Stinks'" 16 December 2001 *Sunday Tribune*.

⁶⁴ *Ibid*.

⁶⁵ "Misdaad Wen, Erken die Regering" 10 August 2008 *Rapport*; and Department of Justice and Constitutional Development "The Review of the South African Criminal Justice System. Presentation to the portfolio committees on Justice and Constitutional Development and Safety and Security" 2008.

for these kits and, in fact, that not one single kit of those researched had all the specimens collected as required.⁶⁶

2 4 Difficulties at the forensic science laboratory (FSL)

Perhaps the greatest criticism levelled at the FSL⁶⁷ is the delays in processing DNA evidence and backlogs.⁶⁸ In a 2008 report for the Institute for Security Studies, Omar⁶⁹ expresses optimism at the improvement of the extent of the backlog existing at the FSL. Though there is a slight increase in the rate of exhibit processing⁷⁰ the problem is by no means eradicated. Judges, magistrates and prosecutors alike, have expressed serious concern about forensic backlogging hampering the successful conclusion of cases.⁷¹

The turnaround time⁷² of cases at the FSL has been reported to be approximately 120 days,⁷³ while Meintjes-Van der Walt, Deputy Director of Public Prosecutions, Transvaal, implied in 2006 that this might be an underestimation of the true state of affairs and that the actual turnaround time was around twelve months, with at least one case being enrolled for eighteen months, awaiting final DNA results.⁷⁴

High staff turnover has caused the FSL both economical and great functional difficulties.⁷⁵ Owing to relatively low salaries, highly trained members of the FSL are increasingly tempted to join foreign laboratories, which results in great loss of expertise and experience from South Africa.⁷⁶ New recruits have to be trained to accommodate the vacancies and this amount to a great economic burden for the FSL.⁷⁷

The fact that teams of forensic experts work only office hours has evoked criticism.⁷⁸ The FSL employs stand-by teams that react to crime scenes on

⁶⁶ "Medical Staff Failing Rape Victims by not Completing Kits, Study Finds" 24 August 2006 *Star*; and Omar "Are we Taking Physical Evidence Seriously? The SAPS Criminal Record and Forensic Science Service" 2008 23 *SA Crime Quarterly* 33.

⁶⁷ For purposes of this article, reference will be made to FSL including the CRC, except where the distinction is pertinently made.

⁶⁸ Omar 2008 23 *SA Crime Quarterly* 29.

⁶⁹ Omar 2008 23 *SA Crime Quarterly* 31.

⁷⁰ Omar 2008 23 *SA Crime Quarterly* 32.

⁷¹ Mazibuko "Forensics Backlog 'Crippling Justice'" 5 January 2008 http://www.news24.com/City_Press/News/0,,186-187_2246991,00.html (accessed 2008-06-27); and Christie "DNA Backlog. *Carte Blanche*" 2006 <http://www.mnet.co.za/Mnet/Shows/carteblanche/Story.asp?ID=3210> (accessed 2008-02-01).

⁷² Omar 2008 23 *SA Crime Quarterly* 35. "Referring to the length of time to process DNA and submit a report to court."

⁷³ Omar 2008 23 *SA Crime Quarterly* 32.

⁷⁴ Christie "DNA Backlog. *Carte Blanche*" 2006 <http://www.mnet.co.za/Mnet/Shows/carteblanche/Story.asp?ID=3210> (accessed 2008-02-01).

⁷⁵ Omar 2008 23 *SA Crime Quarterly* 34.

⁷⁶ *Ibid.*

⁷⁷ *Ibid.*

⁷⁸ Pienaar "Unsolved Murders. *Carte Blanche*" <http://www.mnet.co.za/Mnet/Shows/carteblanche/Story.asp?ID=3091> (accessed 2008-02-01).

an "on-call" basis. This requires a significant amount of time to assemble and some scenes are simply not attended.⁷⁹

Expert witnesses, called upon by the prosecution, are mostly from the legion of the FSL. It therefore stands to reason that the members of the FSL are required to comply with strict standards of scientific competence and integrity. The importance of expert testimony has never before been more evident, as is clear from the already discussed Van der Vyver case.⁸⁰

The requirements for admissibility of opinion evidence are that the witness must qualify himself as an expert before an opinion is submitted. In order to satisfy this requirement, the witness: (a) must have specialist knowledge, training, skill or experience to assist the court in deciding certain issues; (b) must be an expert for the purpose for which he is called upon to express an opinion; and (c) may not submit opinions based on hypothetical, irrelevant facts.⁸¹ Meintjes-van der Walt⁸² states the requirements for an expert witness in South Africa include specialized knowledge, skill, training or sufficient experience to enable them to provide the court with information generally beyond its comprehension. She excludes any formal qualification as compulsory requirement for an expert witness.⁸³ Though formal qualifications cannot replace relevant and extensive practical experience, it is respectfully submitted that formal qualification should be highly valued as requirement for valid expert testimony, especially in the arena of natural science. This is argued for two main reasons. Firstly, the decision in *S v Huma*,⁸⁴ namely to grant the accused in the case assistance of a ballistic expert witness at state expense, as well as the success in the Van der Vyver case⁸⁵ due in large part to the defence's employment of experts from abroad, will no doubt prompt the acquisition of independent experts for the defence in future criminal trials. To prevent a failure of forensics as was found in *S v Van der Vyver*,⁸⁶ experts for the defence must be able to stand side by side with scientists from across the globe and this will surely require formal qualifications, as scientific knowledge has become highly specialized and competitive. Scientific evidence given by highly experienced expert witnesses who have not achieved formal qualifications, should of course not be excluded but care should be taken that such opinions are based on a strict scientific foundation.

Secondly, the test for admissibility of expert witnesses in the United States of America, specifically Rule 702 of the Federal Rules for the admissibility of evidence, requires an expert witness to be "qualified".⁸⁷ Since scientific expert evidence is playing an increasingly important role in the

⁷⁹ *Ibid.*

⁸⁰ *Supra.*

⁸¹ Schwikkard and Van der Merwe 92.

⁸² "Science Friction: The Nature of Expert Evidence in General and Scientific Evidence in Particular" 2000 117 *SALJ* 772.

⁸³ Meintjes-van der Walt 2000 117 *SALJ* 773.

⁸⁴ 1995 2 *SACR* 407 W.

⁸⁵ *Supra.*

⁸⁶ *Ibid.*

⁸⁷ Faigman, Porter and Saks "Check Your Crystal Ball at the Courthouse Door, Please: Exploring the Past, Understanding the Present, and Worrying About the Future of Scientific Evidence" 1993-1994 *15 Cardozo Law Review* 1814.

outcome of criminal proceedings, it is vital that the standard for admittance of such evidence be equally as demanding as that in other jurisdictions.

The science practised by members at the FSL must be equally precise. In *S v Maqhina*⁸⁸ the necessity of a valid scientific basis was underlined when a DNA expert witness for the defence devaluated State evidence by pointing out deficiencies in the FSL expert's process of DNA analysis. In the face of this criticism of the State's evidence, the accused was acquitted.⁸⁹

Further examples of the failure of expert evidence in criminal trials may be found in *S v Mkhize*,⁹⁰ and *S v Mokgiba*,⁹¹ where expert evidence was rejected due to the deviation from standard operating procedures to be used in ballistic comparisons, and the failure to submit an opinion *without proper scientific grounds*, respectively. These examples serve to underline the necessity of performing all forensic analyses in accordance with strict scientific procedure, as well as generating expert opinions that are founded upon strict scientific basis.

Another matter for concern is the Forensic Science Laboratory's status as non-accredited laboratory. Accreditation ensures compliance with certain minimum standards which in turn ensures the reliability of scientific results. Future accreditation would only serve to improve the credibility of opinion evidence emanating from analyses performed at the FSL. In *S v Maqhina*⁹² the fact that the FSL is not accredited was put into harsh context when the expert for the defence refused to comment on the reliability of the State's evidence, further discrediting it and leading to its ultimate rejection.⁹³

2 5 Dilemmas in the courtroom

When evidentiary samples are submitted to the FSL, they are not always analysed immediately. Analysis is activated when requested by a state prosecutor.⁹⁴ This means that pieces of potentially crucial evidence may be simply forgotten in a laboratory fridge if the prosecutor in the case neglects to submit a form or letter requesting, for example, DNA analysis.⁹⁵

This letter or form is compiled with the purpose of prioritising the relevant evidentiary sample analysis to ensure the results are ready for submission at the next court appearance. Without this form analysis will either not be performed, or it will fall to the back of the line behind other samples of higher priority and then cause great delays in trial proceedings. Furthermore, the form serves to communicate precise information to the laboratory required by court⁹⁶ so as to save time and resources.⁹⁷

⁸⁸ 2001 1 SACR 241 (T).

⁸⁹ *S v Maqhina supra* 252.

⁹⁰ 1998 2 SACR 478 (W).

⁹¹ 1999 1 SACR 534 (O).

⁹² *Supra* 251.

⁹³ *S v Maqhina supra* 251-252.

⁹⁴ Omar 2008 23 *SA Crime Quarterly* 31.

⁹⁵ *Ibid.*

⁹⁶ Omar 2008 23 *SA Crime Quarterly* 33.

⁹⁷ "Dire Forensic Labs Let Suspects Walk" 31 May 2008 *The Cape Argus*.

Disturbingly, in 2007 only 6 984 requests for DNA analysis were received by the FSL from prosecutors across South Africa to accelerate DNA analyses. Considering the fact that the biology unit – responsible for the analysis of DNA-containing materials – can receive up to 42 000 cases for DNA analysis per annum, it is perhaps no surprise why there are such frequent delays in the justice system.⁹⁸

It is perhaps important to note that the NPA's *Prosecutor's Delivery Handbook: Awaiting Trial Detainee Guidelines*⁹⁹ contains a clear elucidation of the steps to follow in the event of DNA-analysis requests. Despite this document, requests to the FSL remain incomprehensively small in number.

Knowledge of *what* scientific evidence analysis to request and, more importantly, how to present such evidence in court, requires considerable skill. Skills that cannot be easily taught, but may be obtained through practice and experience.¹⁰⁰ However, much of this experience and practice is lost due to the high turnover rate of prosecutors and this will adversely affect the professional capacity of the prosecution service to perform this essential function.¹⁰¹

This loss of experience due to the high turnover has somewhat impeded the NPA's *Strategy 2020*,¹⁰² a strategy planning document, in which the NPA endeavours to contribute to a more successful system of crime prevention and resolution by means of prosecution-led or prosecution-guided investigations. In perusing the dockets during a particular investigation, it is the duty of the prosecutor to guide that investigation by requesting certain forensic analyses and/or additional inquiries. The docket is then once again submitted to the police investigator whose responsibility it is to follow up on these directives.¹⁰³ However, it is clear that the lack of experience among prosecutors would certainly impede the requisition of analyses since they do not obtain sufficient experience to be familiar with the available technology and options.

Another important aspect of prosecution perfected through experience is the proper presentation of expert evidence in court. As was evident from the *Van der Vyver* case, insufficient knowledge on the side of the prosecution regarding experts and the evidence they are to lead, can cause some significant embarrassment for the state and dire consequences for an innocent accused.

⁹⁸ Omar 2008 23 *SA Crime Quarterly* 33.

⁹⁹ National Prosecuting Authority s.a. 34-37.

¹⁰⁰ Schonteich "Lack of Conviction: Prosecution's Poor Performance" *Institute for Security Studies Crime Index* 1999 3(2) <http://www.kahawacafe.com/PUBS/CRIMEINDEX/99VOL3NO2/Conviction.html> (accessed 2008-07-18).

¹⁰¹ *Ibid.*

¹⁰² NPA (2005) 19.

¹⁰³ Pienaar "Unsolved murders. *Carte Blanche*" <http://www.mnet.co.za/Mnet/Shows/carteblanche/Story.asp?ID=3091> (accessed 2008-02-01).

3 FOREIGN JURISDICTIONS

3.1 Introduction

The legal systems in both England and the United States of America function in accordance with the jury system¹⁰⁴ and follow the adversarial process. The rationale for selecting these specific jurisdictions for study relates to the differing aspects regarding admissibility of scientific evidence employed in these countries.¹⁰⁵ The United States of America, for example, employ clearly defined procedures to establish whether evidence from a particular scientific technique should be admitted.¹⁰⁶ On the other hand, the English legal system, like the South African legal system, experiences a definite absence of fixed protocol for validating scientific techniques before being admitted in court.¹⁰⁷

Prior to evaluating expert testimony and its admissibility in the aforementioned jurisdictions, some deliberation will be granted to the capricious relationship between science and law that exists even in developed nations such as those under discussion.

3.2 Science and law

3.2.1 Science and the crime scene

A significant distinction of forensic science in developed countries is that systems of training and application have been developed, refined and manifested. In the USA, for example, universities offer a range of detailed degree and diploma courses in specialized fields ranging from crime scene analysis to latent fingerprint detection and analysis.¹⁰⁸ This is also true of universities in England.¹⁰⁹

As early as 1975 research in the USA revealed the growing demand for the employment of specialists to collect and process physical evidence. By 2002, Capsambelis¹¹⁰ recognised that detectives and police officers may not always possess the necessary skills and expertise required to investigate an

¹⁰⁴ Bernstein "Junk Science in the United States and the Commonwealth" 1996 21 *Yale Journal of International Law* 124-126.

¹⁰⁵ Meintjes-Van der Walt "A Few Plain Rules? A Comparative Perspective on Exclusionary Rules of Expert Evidence in South Africa" 2001 64 *THRHR* 244. These rules and how they relate to the South African perspective will be discussed at the conclusion of this section.

¹⁰⁶ House of Commons *Forensic Science on Trial*. House of Commons: Science and Technology Committee. Seventh Report on Session 2004-05. 29 March. London: Stationery Office Limited.

¹⁰⁷ *Ibid.*

¹⁰⁸ Capsambelis "So Your Student Wants to be a Crime Scene Technician?" 2002 13(1) *Journal of Criminal Justice Education* 113; and GradSchools.com "GradSchools" <http://www.gradschools.com/Subject/Forensic-Science/165.html> (accessed 2008-08-22).

¹⁰⁹ Forensic Science Service "Forensic Science Services" <http://www.forensic.gov.uk/> (accessed 2008-08-22) 2007:s.p.; and House of Commons "Forensic Science on Trial. House of Commons: Science and Technology Committee." Seventh Report on Session 2004-05. 29 March. London: Stationery Office Limited 43-45.

¹¹⁰ Capsambelis 2002 13(1) *Journal of Criminal Justice Education* 113.

entire crime scene. In fact, he notes that, in recent times law enforcement agencies have started employing non-sworn civilian personnel, specifically trained to collect and preserve physical evidence at crime scenes.¹¹¹ He further asserts that mere on-the-job training and a high school diploma, as was previously required for crime scene technicians, might not suffice in light of growing technological advances in forensic science.¹¹²

These factors, as well as the mounting concern at “poor” forensic evidence in criminal trials,¹¹³ have led to the development of not only undergraduate and graduate training programmes at tertiary institutions in the USA and England, but also protocols and standards of operating procedure pertaining to crime scene investigation and forensic science.¹¹⁴ Largely absent in law enforcement in South Africa, these are surely elements that promote the credibility of science in court.¹¹⁵

3 2 2 Science and the prosecution

The Crown Prosecution Service (CPS) is the independent authority responsible for prosecuting criminal cases investigated by the police in England and Wales.¹¹⁶ Prosecutors for the Crown share some of the police’s responsibility of obtaining forensic services where such services are deemed necessary in light of a committed crime.¹¹⁷ These forensic services are provided by The Forensic Science Service (FSS), an Executive Agency of the Home Office in England and Wales. The FSS supports the criminal justice system in England by providing scientific analysis and interpretation to support criminal investigations, maintenance of the National DNA Database, analysis of DNA for inclusion on the National DNA Database, and expert testimony in support of prosecutions.¹¹⁸

In recognition of the vital relationship amongst the police, the CPS, and the FSS, the CPS drafted the *Protocol for the Supply of Forensic Science Services to the Police and the Crown Prosecution Service*.¹¹⁹ This document

¹¹¹ Capsambelis 2002 13(1) *Journal of Criminal Justice Education* 114. The term “crime scene technician” has been designated to describe a person responsible for the location, preservation, development, and collection of physical evidence at crime scenes.

¹¹² Capsambelis 2002 13(1) *Journal of Criminal Justice Education* 114.

¹¹³ Bernstein 1996 21 *Yale Journal of International Law* 124-125; and Meintjes-Van der Walt “Many a Slip ... The Need for Strengthening the Chain of Expert Evidence” 2000 XXXIII(1) *The Comparative and International Law Journal of Southern Africa* 360-364.

¹¹⁴ Barksdale “Crime Scene Investigation Protocol” www.neiai.org/index.php?option=com_docman&task=doc_download&gid=12&Itemid=54 (accessed 2008-08-15).

¹¹⁵ Though certain South African universities offer programs in specialized domains such as entomology, for instance, no programmes exist to address crime scene analysis exclusively. In addition, protocols in South Africa pertaining to forensic evidence seem to be inconsistently followed.

¹¹⁶ Crown Prosecution Service “The Crown Prosecution Service: Introduction” <http://www.cps.gov.uk/index.html> (accessed 2008-04-01).

¹¹⁷ Roberts “Science in the Criminal Process” 1994 14(4) *Oxford Journal of Legal Studies* 472, 474 and 477.

¹¹⁸ House of Commons *Forensic Science on Trial*. House of Commons: Science and Technology Committee. Seventh Report on Session 2004-05. 29 March. London: Stationery Office Limited.

¹¹⁹ Crown Prosecution Service “The Crown Prosecution Service: Introduction” <http://www.cps.gov.uk/index.html> (accessed 2008-04-01).

aims *inter alia* to “maximise the contribution of forensic science to the case through improved communications amongst the Police, the FSP¹²⁰ and the CPS, utilising efficient processes, and roles within each of the Agencies in accordance with agreements made under this Protocol.”¹²¹ The Protocol is a beneficial instrument in consolidating the different branches of law enforcement in England and surely improves communication and interaction amongst these branches.

In 2005 the House of Commons published a report in which the need for advanced training of Crown prosecutors was delineated:

“In view of the increasingly important role played by DNA and other forensic evidence in criminal investigations, it is wholly inadequate to rely on the interest and self-motivation of the legal profession to take advantage of the training on offer. We recommend that the Bar make a minimum level of training and continuing professional development in forensic evidence compulsory.”¹²²

The success of the adversarial legal system, especially with regard to the credibility of expert testimony in such a system, is heavily reliant on the competence of the legal practitioner involved. This is in agreement with Brian Thompson, secretary of the *Expert Witness Institute* in the United Kingdom, who said:

“There is a real danger that if lawyers do not understand expert evidence then it will not be properly tested.”¹²³

The emphasis that the report by the House of Commons places on the need for developing compulsory forensic training for CPS lawyers is strongly supportive of the realisation that modern forensic science has advanced to a point where ignorance or mere awareness of expert evidence will no longer suffice in the courtroom.

3 3 Admissible expert evidence

There is at present a distinct lack of authority in the shape of protocol or case law guiding the admissibility of novel scientific evidence in both English¹²⁴ and South African law.¹²⁵ In these countries it seems that the reliability of expert evidence is generally a factor aiding the determination of the weight that is to be assigned to such evidence, rather than its admissibility.¹²⁶

¹²⁰ Referring to the Forensic Service Providers.

¹²¹ Crown Prosecution Service “The Crown Prosecution Service: Introduction” <http://www.cps.gov.uk/index.html> (accessed 2008-04-01).

¹²² House of Commons *Forensic Science on Trial*. House of Commons: Science and Technology Committee. Seventh Report on Session 2004-05. 29 March. London: Stationery Office Limited.

¹²³ Thompson “Expert witnesses in the dock” 2004 *The Barrister*, from: House of Commons *Forensic Science on Trial*. House of Commons: Science and Technology Committee. Seventh Report on Session 2004-05. 29 March. London: Stationery Office Limited.

¹²⁴ *Ibid.*

¹²⁵ Meintjes-Van der Walt 2001 64 *THRHR* 244.

¹²⁶ *Ibid.*

In England and Wales it is at the discretion of the presiding officer to decide whether a field of learning has developed to the point where a person of proper qualification can testify thereto.¹²⁷ English legislation in the form of The Police and Criminal Evidence Act of 1984¹²⁸ affords the presiding officer a wide discretion to exclude evidence, including expert testimony.¹²⁹

It has been suggested that stricter rules of evidence admissibility be developed in England in order to define clearly which scientific techniques may or may not be admitted in court, and to relieve presiding officers of the burden of deciding on the admissibility of evidence of intricate scientific complexity.¹³⁰ Despite the argument that South Africa no longer needs to adopt strict rules of expert evidence admissibility,¹³¹ it is suggested here that, like the English legal system, South Africa should develop comprehensive rules of evidence admissibility to curtail the admission of “junk science” in our courts. Justification for this argument may lie in the fact that development of scientific technology has proceeded at an astounding rate and that the lack of knowledge on the part of presiding officers and lawyers has placed them in a weak position to evaluate the evidential value, credibility and admissibility of expert evidence.¹³²

In 1923 the United States of America commenced a lengthy process of legal reform in the arena of expert evidence admissibility. In the case of *Frye v United States*,¹³³ the so-called “general acceptance” test was described and was mainly directed at determining whether the expert in question was “qualified”. If it was so determined, the expert’s testimony was entitled to be admitted as expert evidence.¹³⁴

The *Frye*-test evoked some considerable criticism¹³⁵ and in 1975 the statutory Federal Rules of Evidence¹³⁶ came into effect, offering courts another obscure test for admissibility of expert evidence.¹³⁷ In addition to demanding that an expert possess expertise in a given domain, these rules *inter alia* provide for the exclusion of certain evidence and emphasises relevancy as factor in establishing admissibility.¹³⁸ Criticism ensued,

¹²⁷ Bernstein 1996 21 *Yale Journal of International Law* 167.

¹²⁸ Particularly s 78 of the Act.

¹²⁹ Bernstein 1996 21 *Yale Journal of International Law* 168.

¹³⁰ Bernstein 1996 21 *Yale Journal of International Law* 166; House of Commons *Forensic Science on Trial*. House of Commons: Science and Technology Committee. Seventh Report on Session 2004-05. 29 March. London: Stationery Office Limited.

¹³¹ Meintjes-Van der Walt 2001 64 *THRHR* 256.

¹³² House of Commons *Forensic Science on Trial*. House of Commons: Science and Technology Committee. Seventh Report on Session 2004-05. 29 March. London: Stationery Office Limited.

¹³³ 293, F. 1013 (D.C. Cir. 1923).

¹³⁴ Faigman, Porter and Saks 1993-1994 15 *Cardozo Law Review* 1803.

¹³⁵ Bernstein 1996 21 *Yale Journal of International Law* 127; and Faigman, Porter and Saks 1993-1994 15 *Cardozo Law Review* 1805.

¹³⁶ Bernstein 1996 21 *Yale Journal of International Law* 128. Though these Rules were mainly binding on federal courts, most states in the USA have come to adopt these Rules.

¹³⁷ Bernstein 1996 21 *Yale Journal of International Law* 128; and Faigman, Porter and Saks 1993-1994 15 *Cardozo Law Review* 1809.

¹³⁸ Bernstein 1996 21 *Yale Journal of International Law* 128.

however, as some courts adopted the new relevancy test, while many continued to employ the *Frye*-standard of general acceptance.¹³⁹

In 1993 the Supreme Court of the USA clarified the requirements for the admissibility of expert opinion evidence in the case of *Daubert v Merrell Dow Pharmaceuticals*.¹⁴⁰ The court in this instance held that the general acceptance test as utilised in *Frye* was greatly inferior to the Federal Rules and, in fact, violates those rules. However, the court also stated that courts must guard against the inclusive trends invented by the Federal Rules in allowing all relevant evidence. Presiding officers must act as “gatekeepers” in obstructing unreliable scientific evidence from entering the courtroom.¹⁴¹ In interpreting Rule 702¹⁴² of the Federal Rules, the court held that the term “scientific” denotes a foundation in valid scientific principles, and that the word “knowledge” implies more than subjective belief or unsupported speculations, that the expert’s assertions be generally accepted in the scientific community.¹⁴³

In short, the *Daubert* ruling evaluates expert evidence in light of four criteria: whether the theory or technique employed in the analysis can be tested, whether it has been subjected to peer review and publications, the potential rate of error of a specific technique, and whether the technique in question has gained widespread acceptance in the scientific community.¹⁴⁴

The rules of admissibility as described in *Daubert* possess a distinct exclusionary aspect, which must aid the presiding officer in eliminating unreliable or “junk” scientific evidence. It has been suggested that the English legal system develop equally stringent rules for admissibility and that it must build on the *Daubert* test.¹⁴⁵

It is submitted that South Africa too, can benefit from the adoption of a similar test. It would appear from the case of *S v Van der Vyver*¹⁴⁶ that properly defined exclusionary rules may not only prevent unreliable or even fabricated evidence from being admitted in court, but that this may also reduce unnecessary expenditure on the side of an innocent defendant and the State.

¹³⁹ Bernstein 1996 21 *Yale Journal of International Law* 129.

¹⁴⁰ 113 S. Ct. 2786, 2793-94 (1993).

¹⁴¹ Bernstein 1996 21 *Yale Journal of International Law* 135.

¹⁴² Rule 702. Testimony by Experts:

“If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.”

¹⁴³ Faigman, Porter and Saks 1993-1994 15 *Cardozo Law Review* 1818; and Bernstein 1996 21 *Yale Journal of International Law* 135.

¹⁴⁴ House of Commons *Forensic Science on Trial*. House of Commons: Science and Technology Committee. Seventh Report on Session 2004-05. 29 March. London: Stationery Office Limited.

¹⁴⁵ *Ibid.*

¹⁴⁶ *Supra.*

4 CONCLUSION

The essential objective of law enforcement, namely the conviction of guilty perpetrators, has suffered greatly due in large part to the fracture between the potential assistance in crime resolution offered by science on the one hand, and law of evidence on the other. The case of *S v Van der Vyver*,¹⁴⁷ as discussed above, is a clear illustration of this fracture. The prosecution in this case was provided with three pieces of scientific evidence that, at first glance, appeared to be solid and credible, but were later wholly discredited by independent experts for the defence, and in fact, rejected by the international forensic science community.¹⁴⁸

An analysis of the failure of forensic science and justice in the aforementioned case merely confirms the proposition that reform of a single branch of law enforcement is not sufficient to combat the problem of lawlessness in South Africa. Every section of the criminal justice system, from the responding police officers on a crime scene to the prosecution and the courtroom, has to reaffirm its allegiance to justice by not only improving its own practices, but also to collaborate with all other departments for successful crime resolution.¹⁴⁹

The divide that seems to exist between law and science in South Africa is not unique in its extent or its nature. Other jurisdictions have recognised this problem in their own systems.¹⁵⁰ The South African criminal justice system is in desperate need of review. This was acknowledged by the South African government in the form of the presentation of *The Review of the South African Criminal Justice System* to the Portfolio Committee on Justice and Constitutional Development and Safety and Security.¹⁵¹ This document was approved by the South African Cabinet on 7 November 2007 and sets out extensive and transformative changes to the local criminal justice system. The *CJS Seven-Point-Plan* is to be implemented in an integrated and holistic manner in the practices of the South African Police Service, the Department of Justice, the Department of Correctional Services, as well as the National Prosecuting Authority.¹⁵²

The first aspect this *Plan* addresses is the integration and synchronisation of the different agencies in law enforcement by the creation of a single vision

¹⁴⁷ *Ibid.*

¹⁴⁸ Grimm "Certificate of Re-examination Supplement. 5 February 2007" <http://www.clpex.com/Articles/TheDetail/300-399/TheDetail331.htm> (accessed 2008-08-22).

¹⁴⁹ Department of Justice and Constitutional Development "The Review of the South African Criminal Justice System. Presentation to the portfolio committees on Justice and Constitutional Development and Safety and Security" 5 August 2008.

¹⁵⁰ Faigman, Porter and Saks 1993-1994. *15 Cardozo Law Review* 1800.

¹⁵¹ The Review Team concluded that "a fundamental and radical departure from what presently exists is required to transform the present CJS, which is fragmented, unfocused, mainly driven by (or not) the strength of the personalities of individuals in leadership positions and meandering-on on its own merry pace; into a CJS which is focused, co-ordinated and well-managed, at every level". – Ministry of Justice 2008 15.

¹⁵² Department of Justice and Constitutional Development "The Review of the South African Criminal Justice System. Presentation to the portfolio committees on Justice and Constitutional Development and Safety and Security" 5 August 2008.

and mission for the criminal justice system.¹⁵³ This relates to the second proposed change that involves the establishment of a novel and realigned single coordinating and management structure that flows from Cabinet to each court.¹⁵⁴ Thirdly, a drastic transformation is envisaged for court processes in criminal matters, including processes for screening of cases before going to trial.¹⁵⁵

Of particular importance to the issues of this study is the *fourth* recommended change in the law enforcement system. The government is committed to increase the number of crime scene and forensic experts substantially, as well as detectives in the SAPS, along with an increase in facilities and equipment. In addition the government intends to improve the training of the aforementioned groups,¹⁵⁶ though it is not clearly understood how this object is to be achieved. Included in this recommendation is the objective of retaining skilled and experienced prosecutors in the NPA, as well as enhancing the effect of prosecutor-guided investigations. It also proposes a consolidated work effort between prosecutors and detectives in screening dockets for trial, another mechanism whereby the different agencies may be collaborated in law enforcement. An improved work environment, though vague in description, is also intended under this recommendation.¹⁵⁷

The set of objectives as described under the fourth proposed change to the criminal justice system is a source of great optimism. If implemented and adhered to, these changes may go a long way in improving the current flawed system.

¹⁵³ *Ibid.*

¹⁵⁴ *Ibid.*

¹⁵⁵ *Ibid.*

¹⁵⁶ *Ibid.*

¹⁵⁷ *Ibid.*