Defence challenges of forensic scientific evidence in criminal proceedings in South Africa

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ABSTRACT
This article seeks to understand the roles of the two adversarial parties involved in the presentation and testing of forensic scientific evidence in criminal proceedings in South Africa, and to predict the future of challenging expert evidence in developing countries. The traditional roles of parties to an adversarial criminal trial are reviewed, with specific focus on the practice of challenging forensic scientific evidence presented by the prosecution, as are developments in the American legal system with reference to the effectiveness of challenging expert evidence presented by the prosecution. The possible impact of these developments on the future constitutionality of legal representation as practised in South Africa, is also briefly considered. The importance of reliable forensic scientific evidence employed in criminal proceedings necessitates not only the presentation of accurate forensic evidence by both adversarial parties, but also the informed cross-examination of opposing experts. This, in turn, demands equality in the adversarial battle, which, as it currently stands, does not exist in developing countries such as South Africa.

1 Introduction
There is no mechanism to estimate the number of innocent people wrongfully convicted of crime in South African courts. In the United States of America, legal practitioners affiliated with the Innocence Project, as well as private attorneys and other organisations, exploit DNA profiling technology to assist wrongfully convicted prisoners to finally prove their innocence. While it is impossible to accurately quantify wrongful convictions in any jurisdiction, the Innocence Project has thus far observed post-conviction exoneration of more than 320 condemned prisoners as a result of forensic DNA profiling. The practice of post-conviction exoneration based on DNA profiling is not

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yet established in South Africa and the only instruments available to persons wrongly convicted are the traditional avenues of appeal or review, after which no further consideration is given to the case.

South Africa is no more immune to the danger of wrongful convictions than other accusatorial jurisdictions. Meticulous and effective legal assistance is not only consistent with the necessity of fairness in criminal proceedings, but perhaps also one of the most imperative safeguards against wrongful conviction of innocent persons accused of crime. Since it has been discovered that forensic scientific evidence has played a significant role in many erroneous convictions in America, it stands to reason that competent legal assistance must include proper and comprehensive testing of forensic evidence proffered by the prosecution.

A review of South African criminal proceedings suggests that the state has traditionally submitted forensic scientific evidence without significant challenge by defence counsel. Challenges on the basis of scientific reliability and interpretation of results are rare, and legal representatives are often encumbered by budgetary and time constraints, and intimidated by the complexity of scientific evidence. While prosecutors generally do not consider themselves responsible for ensuring that only reliable forensic science evidence is admitted during trial, legal representatives too are often slow to successfully implement adversarial instruments that are traditionally expected to prevent admission of faulty forensic evidence. This means that the burden of determining reliability of forensic scientific evidence is generally left to the devices of the judicial adjudicator.

The objectives of this article are to: i) describe the traditional roles of the two adversarial parties involved in the presentation and testing of forensic scientific evidence; ii) explicate the nature of adversarial instruments that are traditionally expected to prevent admission of faulty forensic evidence; iii) identify the challenges and constraints that prevention of admission of faulty forensic evidence face in South Africa; and iv) describe the nature and extent of adversarial instruments that are implemented in South Africa.

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2 L Meintjes-Van der Walt ‘Eyewitness evidence and eyewitness science: Whether the twain shall meet?’ (2009) 22 SACJ 305 at 308. An independent, non-profit organisation entitled ‘Innocence Project South Africa’, is currently being established in this country. Under the management of Prof Sean Davison and Melodie Slabbert, this organisation is dedicated to the investigation, litigation and exoneration of individuals wrongfully convicted in South Africa. Ideally, Innocence Project SA will fill the gap in post-conviction assistance and provide the required support for those wrongfully convicted.

3 G Goodpaster ‘The adversary system, advocacy, and effective assistance of counsel in criminal cases’ (1986) 14 NYU Rev Law & Social Change 59.


7 For example, exhaustive cross-examination and the acquisition of own expertise.
of forensic scientific evidence in criminal proceedings in South Africa, ii) to compare this to some contemporary trends in the American legal system, and iii) to contribute to the current literature on forensic evidence reliability establishment by predicting future approaches by counsel for the defence in developing countries like South Africa. The article is written against the backdrop of the ordinary criminal trial as opposed to high-profile proceedings where resources are abundant in support of adversarial safeguards. Finally, acquisition of forensic experts for the defence and greater collaborative efforts between defence lawyers and forensic specialists are suggested.

Recent unearthing of the questionable nature of many prominent forensic sciences techniques \(^8\) and the high instances of exonerations in many international legal systems, have underscored the danger of wrongful convictions based on dubious forensic evidence. While legal practitioners in developing countries especially, generally function under great pressure and despite deficient resources, the price defendants in criminal proceedings pay for antiquated legal practice in the testing of forensic evidence is unacceptably high and legal reform in this regard is essential.

In the first part of this article, the traditional roles of the parties to a criminal trial regarding the testing of forensic scientific evidence will be reviewed. In the second part, modern trends in the United States of America pertaining to the effectiveness of legal representation will be reviewed and weighed against the backdrop of revelations about the true reliability and foundational accuracy of many common forensic sciences.

Finally, a review of the relevant South African position will be used to predict future approaches by legal representatives in presenting and testing complicated scientific evidence in criminal proceedings. Some recommendations will be offered regarding relevant legal reform in developing countries.

2 Presentation and testing of forensic scientific evidence: State versus defence

Prosecutorial entities in the Anglo-American legal systems like that in England-Wales, the United States of America and South Africa, enjoy the benefit of involvement in criminal investigations prior to

criminal proceedings against a suspect. The adversarial nature of criminal proceedings in these jurisdictions licenses the prosecution to construct cases with all available evidence in order to prove the guilt of those accused of crime. Prosecutors' position here is privileged, as they control when and how evidence, specifically forensic scientific evidence, will be used during criminal proceedings. Conversely, counsel for the defence is left to respond to the prosecution's case, and otherwise acting in the best interests of the accused person without any prior involvement in the construction of the case.

In the following section, the main rights, obligations and general functions of the adversarial parties to a criminal trial will be reviewed in terms of the presentation and testing of forensic scientific evidence.

2.1 State's presentation and testing of forensic scientific evidence

Prosecutors' involvement in criminal investigations includes participation in the yielding of forensic scientific evidence. This means that despite prosecutors' sometimes poor understanding of scientific testing, they are tasked with assisting police investigators in obtaining the most effective and reliable evidence for inclusion in case dockets. Kelly identifies two essential prosecutorial responsibilities regarding scientific evidence in the criminal investigation in the United States of America: ordering the testing of such evidence, which includes determining the type and extent of testing, and preservation of the evidence.

Similarly, prosecutors affiliated with the Crown Prosecution Service in the England-Wales legal system participate in decision-making endeavours such as whether to use scientific evidence or not, the choice and instruction of appropriate experts, and its use in pre-trial conferences and trials. In South Africa too, prosecutors participate

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10 Edmond op cit (n8) 922.

11 K Kelly 'Prosecutor's role and ethical responsibilities with regard to the testing of scientific evidence' (2012) 25 Georgetown J Legal Ethics 609 at 610-617. With regards to the preservation of evidence, prosecutors have a duty to preserve potentially exculpatory evidence based on the innocence protection laws in the USA, especially since defendants are frequently charged after forensic analyses have been concluded – Kelly op cit (n11) 614.

12 Roberts op cit (n9) 472-498.
in so-called ‘prosecutor-guided investigations’, in order to improve the quality of criminal investigations and case docket construction. This arrangement allows for a conference between prosecutors and investigating detectives from early on in the investigative process, during which time the case docket is constructed in a manner that would allow for as few court postponements as possible, that would ultimately ensure the inclusion of all necessary evidence (including the requisitioning of necessary forensic testing), and also to provide an opportunity to improve the important relationship between prosecutors and the police.

According to Saks, prosecutors are responsible for verifying that the skill and qualifications of forensic scientists that are to testify in subsequent criminal proceedings meet legal criteria for expert opinion evidence. In South Africa, prosecutors are in the fortunate position of having free access to qualified and experienced forensic analysts in the Criminal Record and Forensic Science Service (CRFSS). Freedom of access to these forensic experts includes the authority to mandate certain analyses (for example, DNA analysis of a particular sample), as well as to contact and consult with these experts at any time before and during the subsequent criminal trial. This provides prosecutors with tremendous opportunity to familiarise themselves with the intricacies of complicated forensic science evidence before the trial commences. Public prosecutors in South Africa are encouraged to schedule pre-trial meetings with the relevant state forensic scientists from one of the state forensic science laboratories of the CRFSS conducting the relevant analyses. Uncertainties can be clarified, scientific concepts can be explained, and possible questions and problems can be anticipated. This pre-trial process can greatly assist prosecutors in launching as strong a case as possible against the accused.

In this regard, Edmond states that modern day prosecutors can no longer claim ignorance of problems with forensic scientific evidence they intend on leading during trial. Sufficient literature exists to inform legal practitioners, specifically prosecutors, of these pitfalls. In support of Edmond’s opinion it is submitted here that while prosecutors in South Africa are burdened with almost unparalleled workloads and accompanying pressure, the remarkable influence of forensic science

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14 Saks op cit (n4) 426.
15 This is similar to the position in the England-Wales legal system prior to the privatisation of forensic services as described in Roberts op cit (n9) 476.
16 Edmond op cit (n8) 931.
on judicial decisions justifies the duty upon prosecutors to be informed of hazards and strengths in its evidence.

2.2 Defence’s presentation and testing of forensic scientific evidence

In South Africa, the defence have the right of access to the contents of a police case file based on the accused person’s constitutional right to a fair trial. However, this access is not without qualification. Prosecutors are entitled to refuse access to some or all documents in the case file subject to the objective presence of reasonable risk that the disclosure will prejudice the interests and administration of justice. Moreover, the defence does not have an automatic right of access to the case docket during two vital stages of the criminal justice process: the criminal investigation and bail application proceedings prior to trial. This allows the prosecution time to fully and comprehensively prepare an onslaught of forensic science evidence long before the defence finally has access to the information. In 2006, however, the Supreme Court of Appeal sanctioned the legitimacy of court ordered access to expert evidence in bail applications where such information is necessary to assist the court in reaching a fair decision. Such access is, however, still subject to defence application. Although South African criminal courts will also grant defence counsel postponements to thoroughly prepare for bail applications and trial, such postponements will not always be adequate for proper acquisition, consultation and preparation of comprehensive forensic scientific expertise. Furthermore, this excludes the possibility of defence experts attending crime scenes or primary forensic examinations and analyses. So while access to docket at the pre-trial stage certainly improves the defence’s position, the state is still in an inordinately strong position at the beginning of a trial regarding the strength of cases filed against accused persons.

While prosecutors globally often enjoy the advantage of collaboration with investigating officers and forensic scientists during the investigative

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18 Where prosecutors refuse an application for access to the contents of a docket, the deciding court must consider whether access to the relevant part of the docket is included in the particular accused person’s right to a fair trial as stipulated for by s 35(3) of the Constitution – *Shabalala v Attorney-General, Transvaal* supra (n17) at para [36].

19 S 60(14) of the Criminal Procedure Act 51 of 1977. See also *S v Dlamini; S v Dladla and Others; S v Joubert; S v Schietekat* 1999 (2) SACR 51 (CC).

and pre-trial stages of the criminal justice process, defence counsel must rely on their own skill, expertise and experience in constructing a case for the accused. This is also the case in South Africa. Where the defence attorney (or advocate) has no experience or understanding of forensic scientific evidence, it is unlikely that he or she will recognise the appropriate avenues to follow in its counteroffensive against the state’s evidence. It will also be unlikely that the defence will be able to identify adequately qualified, skilled and experienced private forensic scientists who will comply with the evidentiary standards of expert witness criteria. Additionally, the vast majority of individuals accused of crime in South Africa (as well as other developing countries) cannot afford private legal representation and therefore obtain the services of governmental legal assistance in the form of the Legal Aid Board. Regrettably, attorneys with the Legal Aid Board are over-extended and greatly under-funded. In 2013, for example, Legal Aid was allocated only 8% of the National Prosecuting Authority of South Africa’s annual budget. In the same year, De Vos described the financial inability of the Legal Aid Board to acquire forensic experts to successfully challenge state forensic evidence. This inadequacy of resources leaves Legal Aid attorneys to their own devices in fending off the state’s onslaught of forensic science evidence.

In building the case for the defence, attorneys will undoubtedly have the advantage of their clients’ version of events. They will be able to study the entire arsenal of the state’s attack and will be able to anticipate the strong point in the state’s case, which is not a reciprocal condition since the defence counsel in South Africa has no obligation of disclosure to the state. However, even if the defence managed to acquire qualified forensic expertise, these experts will only have secondary access to crime scenes and physical evidence not

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21 See Roberts op cit (n9) 489-495. While the state forensic science service provider in the England-Wales legal system was abolished in 2012, crown prosecutors are still encouraged to enter pre-trial consultations with forensic science providers and police investigators, to the exclusion of counsel for the defence – The Crown Prosecution Service ‘Protocol for the supply of forensic science services to the Police and the Crown Prosecution Service’ [2014], available at http://www.cps.gov.uk/publications/agencies/forensic.html, accessed on 7 November 2014.


consumed during analysis by state forensic analysts. Consequently, the defence experts will be resigned to study the methodologies of the state experts and interpret the results obtained by these experts. Yet again the state is placed in a stronger position than the defence in terms of the proffered forensic evidence.

Adversarial criminal procedure provides defence counsel with an important instrument to test the state’s forensic evidence: cross-examination. During cross-examination of the state’s forensic experts, defence counsel has the opportunity to discredit the state expert’s testimony. Meintjes-Van der Walt warns that cross-examination may create confusion and obfuscate important facts, but it can also be tremendously helpful in clarifying issues of science for the judicial adjudicator. Reviews of extensive research conducted on wrongful convictions and DNA exonerations in the United States of America reveal that in astonishingly few cases of wrongful convictions based on questionable forensic evidence, defence counsel actually cross-examined experts concerning their invalid testimony. In the England-Wales legal system too, the ability of defence counsel to properly test forensic evidence during cross-examination has also been criticised and condemned. In addition, defence counsel rarely obtain funding to retain their own experts, all of which ensures a failure of the accusatorial instruments that are supposed to filter dubious yet admissible evidence.

In South Africa, the court is compelled to accept forensic science evidence if not disputed by the defence.

‘Our law is quite clear that if evidence is prima facie evidence and it is not discredited or placed in dispute by the defence in any manner then it must be accepted as proven evidence.’

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24 As described by Roberts op cit (n9) 490.
26 JD Lieberman, CA Carrell, TD Miethe and DA Krauss ‘Gold versus platinum. Do jurors recognize the superiority and limitations of DNA evidence compared to other types of forensic evidence?’ (2008) 14 Psychology, Public Policy and Law 27 at 50.
27 Described in G Edmond and K Roach ‘A contextual approach to the admissibility of the state’s forensic science and medical evidence’ (2011) 61 U Toronto L J 343 at 360 to 361.
29 Edmond & Roach op cit (n27) 362.
30 See s 212 of the Criminal Procedure Act 51 of 1977; Seyisi v State (117/12) [2102] ZASCA 144 (28 September 2012).
31 Seyisi v State supra (n30) at para [12].
It is therefore incumbent upon legal representatives to familiarise themselves with the disputable issues contained in the state’s forensic evidence and this would only be possible if the underlying science is understood to the extent that issues can be identified. Thus, even if defence counsel elects not to acquire and adduce expertise for the defence, consultation with applicable experts should still be part of counsel’s case preparation. Without it, the non-scientist attorney is left to his or her own devices in a battle of scientific wits.

It is submitted here that traditional adversarial criminal procedure relating to the presentation and testing of forensic scientific evidence creates inequality between the parties to the dispute, especially in developing countries where most of the persons accused of crimes do not have the resources to acquire defence experts or experienced and skilled representation with scientific knowledge. This sets the stage for criminal proceedings to be conducted under unfair circumstances.

3 Modern trends in forensic scientific evidence presentation and testing by the defence

In this section of the article, the adequacy of the presentation and testing of forensic scientific evidence by legal representatives is reviewed from a constitutional perspective, while comparing the South African position to that of the United States of America, and predicting future legal representation in cases where scientific evidence is tendered in support of an accused person’s guilt.

3.1 Constitutional scrutiny of the standards of counsel for the defence

By the latter part of the twentieth century, ineffective defence counsel in the United States of America resulted in judicial intervention. In United States v Cronic\(^32\) and Strickland v Washington,\(^33\) it was held that the right to assistance of counsel in criminal proceedings, as guaranteed in the Sixth Amendment of the American Constitution, must be understood to include \textit{effective} counsel. Following these judgments, several ineffectiveness claims have been heard by appeal courts, but, as Goodpaster\(^34\) explains, establishing exactly what ineffective assistance amounts to, is no easy task.

The standard of effective counsel set by these judicial precedents has had a significant effect on evaluating defence counsel’s role in the

\(^{34}\) Goodpaster op cit (n3) 60.
presentation and testing of forensic scientific evidence. In *Driscoll v Delo*, the court overturned the trial court’s conviction in a capital murder case after finding that the counsel for the accused had failed to adequately familiarise himself with the laboratory tests performed and inferences drawn by the state forensic expert. Moreover, counsel failed to study the results of the analysis with sufficient care to at least be able to test the state expert’s statements during cross-examination. The court held:

‘In a capital murder case whether or not the alleged murder weapon...had blood matching the victim’s constituted an issue of the utmost importance. Under these circumstances, a reasonable defense [sic] lawyer would take some measures to understand the laboratory tests performed and the inferences that one could logically draw from the results. At the very least, any reasonable attorney under the circumstances would study the state’s laboratory report with sufficient care so that if the prosecution advanced a theory at trial that was at odds with the serology evidence, the defense [sic] would be in a position to expose it on cross-examination.’

In *Lindstadt v Keane*, the accused appealed his conviction on multiple charges of sexual abuse and rape, as well as the subsequent sentence of 12 to 25 years’ imprisonment. The court found that his defence counsel’s ineffectiveness permeated all the evidence presented during trial after failing to conduct any relevant research on the scientific methodology employed by the state medical expert. The latter based his findings on unknown research on the pathology of sexual abuse, which could have been easily refuted by generally available, published research. Had counsel for the defence compared the state medical expert’s views with those readily available in prominent literature, he would have been able to rebut such evidence on cross-examination and during his client’s case.

In South Africa, accused persons are afforded extensive protection in terms of the post-apartheid Constitution. Section 35(3) provides that:

‘(3) Every accused person has a right to a fair trial, which includes (inter alia) the right-
(a) to be informed of the charge with sufficient detail to answer it;
...
(f) to choose, and be represented by, a legal practitioner, and to be informed of this right promptly;

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35 71 F.3d 701 (8th Cir. 1995).
36 *Driscoll v Delo* supra (n35) at 709.
37 239 F.3d 191, 201 (2d Cir. 2001).
38 *Lindstadt v Keane* supra (n37). In this case the appeal court found that the applicant was entitled to be released unless that state granted him a re-trial within 90 days.
to have a legal practitioner assigned to the accused person by the 
state and at state expense, if substantial injustice would otherwise 
result, and to be informed of this right promptly;

(b) to be presumed innocent, to remain silent, and not to testify during 
the proceedings;

(i) to adduce and challenge evidence;

…'

The South African Constitution corresponds with its American 
counterpart in the provision of an entitlement to legal counsel 
in criminal proceedings, if substantial injustice would otherwise 
occur. However, it is submitted here that the progressive South 
African Constitution goes beyond the mere provision of the right to be 
defended, and implies the right to be defended effectively. It does 
so in specifying the right to adduce and challenge evidence in subsec 
(3)(i). Adducing and challenging forensic science evidence of a highly 
complicated and advanced nature cannot reasonably be performed 
without attaining at least a basic standard of scientific knowledge, 
consulting with own forensic experts, or acquiring and adducing such 
evidence on behalf of the accused.

Section 39 of the South African Constitution further demands that 
courts, when interpreting the rights entrenched in the Constitution, 
must consider legal positions in international jurisdictions. It is argued 
here that, in light of American provisions mandating effective defence 
counsel, as well as the South African constitutional entitlement to test 
against evidence and its duty to consider inter alia the American 
position, future criminal convictions should be tested on the basis of 
lack of effectiveness of defence counsel. This is not to secure acquittals 
for the guilty, but rather to secure future justice for all, not only 
those who can meet the expense of private, experienced and skilled 
expert-witnesses.

Indications of courts' willingness to test the effectiveness of legal 
representation on appeal in South Africa abound. In 2008, Claassen J gave judgment in a case where the appellants appealed their convictions 
and sentences for robbery with aggravating circumstances based on 
incompetent legal representation which amounted to an infringement 
on the appellants' constitutional right to a fair trial. In casu the legal 
practitioner in question inter alia failed to challenge and cross-examine 
the state witnesses either effectively or at all. The court held that this

40 See s 35(3)(g).
41 This opinion is supported by previous judgment in, for example, S v Halgren 2002 
(2) SACR 211 (SCA) at para [14].
42 In S v Mafu 2008 (2) SACR 653 (W).
43 According to s 35(3) of the Constitution. In this case the appeal was upheld and the 
convictions and sentences set aside.
constituted a gross irregularity of such monumental proportions that it ultimately infringed on the appellants’ right to a fair trial.\textsuperscript{44}

It is predicted here that accused persons will challenge their convictions progressively more on the basis that their legal representatives provided an inadequate challenge of state expertise, and that this amounts to an unfair trial. It remains to be seen what appeal courts’ responses will be in these instances, but also how courts a quo will react when it is clear from the outset that legal counsel is unskilled in dealing properly with forensic scientific evidence.\textsuperscript{45}

\section*{3.2 Defence counsel testing unreliable or questionable forensic scientific evidence}

In 2005, the National Academy of Sciences (NAS) of the United States of America performed research on forensic science, especially non-DNA forensics or traditional forensic sciences, and its performance within the criminal justice system. The report on this research, published in 2009, revealed severely disconcerting findings regarding the foundational integrity of many of the traditional forensic sciences, the fragmented functioning of much of the existing forensic services, and the deficient research base for many of the popular forensic sciences.\textsuperscript{46}

However, even before the publication of this report, defence challenges of some trusted types of forensic scientific evidence presented by the state, failed reliability testing in American courts. In 2007, an American circuit court judge refused the testimony of a fingerprint expert, stating that the specific method of fingerprint analysis employed in the case was ‘…a subjective, untested, unverifiable identification procedure that purports to be infallible’.\textsuperscript{47} While some scholars believe this judicial decision to be merely ‘…a voice in the wilderness’,\textsuperscript{48} it sent a very strong message regarding the intensification of defence challenges to scientific evidence, as well as the diminishing inclination of judicial adjudicators to accept into evidence expert evidence merely because it always has. One of the most worrying findings in the NAS report was that no forensic science technique, with the exception of DNA analysis, has been shown to demonstrate a link between evidence and

\begin{footnotesize}
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\item \textit{S v Mafu} supra (n42) at 25, 30.
\item Such responses could influence several proximate issues such as the legitimacy of presiding officers to enter the arena without fear of irregularity, disciplinary administration of legal practitioners, etc.
\item National Academy of Sciences op cit (n8).
\item \textit{State of Maryland v Bryan Rose} 2007. (In the Circuit Court for Baltimore County. Case No. K06-0545 at 31).
\item JL Mnookin ‘The courts, the NAS, and the future of forensic science’ (2010) 75 \textit{Brooklyn LR} 1209 at 1234.
\end{enumerate}
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a specific source with consistency and a high degree of certainty.\textsuperscript{49} It stands to reason that this revelation of the uncertainties surrounding forensic testing will result in more vigorous challenging of state expert evidence in the future.

While forensic DNA analysis is certainly the most reliable of the forensic techniques, it is no longer believed to be infallible or exempt from interpretational error.\textsuperscript{50} The proliferation of genetic awareness amongst legal practitioners is resulting in more case-specific questions and objections regarding inter alia laboratory procedures, methods in proclaiming DNA matches, and statistical calculations being offered\textsuperscript{51} progressively more instead of superficial allegations of contamination and broken laboratory machines.

Effective and informed cross-examination and acquisition of qualified and experienced defence experts are essential in detecting and exposing unreliable forensic evidence. According to Saks,\textsuperscript{52} legal representatives should not divorce the obligation of challenging the reliability of scientific evidence from their duties as defence counsel.

‘It is hard to think of principled reasons why an attorney should not be obligated to acquire a good faith basis for believing either that the proffered expertise is valid or that the specific facts or skills brought to bear on the task-at-hand in the trial are valid as a precondition for ethically offering such expert evidence to a court.’

4 South African defence counsel: Quo vadis?

Since the advent of the twenty-first century, South African criminal courts too have seen the effects of judicious testing of forensic scientific evidence, albeit not as voluminous as those in other jurisdictions.

Since the year 2000, two criminal prosecutions of serious cases have seen astute disputes regarding the reliability of forensic DNA evidence. In both \textit{S v Maqhina}\textsuperscript{53} and the Supreme Court of Appeal decision in \textit{S v SB},\textsuperscript{54} the courts preferred the testimony of defence DNA experts and acquitted the accused persons. In both these cases, the court had to evaluate conflicting evidence between state and defence experts. In \textit{S v Maqhina}, the DNA specialist for the defence exposed inadequacies and deficiencies in the state expert’s report on the DNA analysis and

\textsuperscript{49} National Academy of Sciences op cit (n8) at S-5.
\textsuperscript{50} E Murphy ‘The new forensics: Criminal justice, false certainty, and the second generation of scientific evidence’ (2007) 95 Calif LR 721 at 767-772.
\textsuperscript{52} Saks op cit (n4) 426.
\textsuperscript{53} 2001 (1) SACR 241 (T).
\textsuperscript{54} 2014 (1) SACR 66 (SCA).
the court ultimately sided with the defence, acquitting the accused based on lack of evidence. In *S v SB*, the court once again found in favour of the defence expert since his testimony was based on logical and cogent reasoning and, as such, contrasted that of the quality of the state expert's testimony.55

In *S v Nthati*,56 the court, explicitly expressing its dismay, conceded that it would have accepted the state's forensic evidence and convicted the accused had the defence expert not drawn the court's attention to the errors in the proffered evidence. In the high-profile murder case *S v Van der Vyver*,57 the state presented no direct evidence but managed to admit into evidence several pieces of circumstantial traditional forensic science evidence, despite vigorous challenge by the defence. Since the accused in the matter belonged to a comparatively affluent South African family, counsel for defence had at their disposal the resources to acquire several distinguished international forensic scientists who, during presentation of the case for the defence, wholly destroyed the state's case so carefully constructed of expert evidence. While the accused in this matter was acquitted, it is distressing to think what the outcomes of all these cases would have been without forensic experts for the defence.

These examples confirm the immense value of defence experts as outlined by Roberts.58 These include clarification and advice regarding the strength of the state's expert evidence, the formulation of alternative possibilities for scientific investigation or interpretation of results and general assistance in the construction of the defence case.

It is predicted here that in South Africa, as in many other developing countries, there will be a radicalisation of the number and quality of challenges of forensic scientific evidence. This will be due in large part to the following: 1) South African legal representatives must adhere anew to their constitutional duty of providing accused persons with effective legal counsel, which includes adducing and testing forensic science evidence. This constitutional obligation should be entrenched in South African case precedent, as well as in the codified legal principles of other developing countries; 2) an augmented understanding of the sometimes unreliable and invalid nature of forensic evidence and related methodologies must of necessity encourage defence counsel to abandon considerations of resignation and embrace a spirit of knowledge acquisition. This can be achieved either by habitual

55 *S v SB* supra (n54) at 73.
56 1997 (1) SACR 90 (O) at 94.
57 [2008] JOL 21332 (C).
58 Roberts op cit (n9) 498–495.
consultation with scientific experts or by the presentation of defence experts to counter the possibility of inexperienced defence counsel assisting the state in discharging its burden against the accused.

Procuring scientific experts, or even just scientific familiarity, for purposes of testing state’s evidence will not be simple or without its own challenges. Acquired expertise requires significant financial resources, as well as sufficient prudence and insight to ensure that the forensic expert is, in fact, a credible expert from the court’s perspective, offering testimony of superior scientific reliability and validity. This problem is not unique to South Africa. Roberts59 describes similar difficulties in the English-Wales legal system:

‘Criminal legal aid practitioners, under financial and time pressures, make policy decisions about how thoroughly they will prepare their cases. They do not necessarily pursue even those challenges to prosecution scientific evidence of which they are aware, much less do they recognize every opportunity.’

Simultaneously, Roberts60 correctly asserts that expert assistance is effectively a necessity whenever the defence launches disputes against state forensic evidence, particularly in the prosecution of serious offences.

The difficulties overcoming barriers to obtaining defence experts must be addressed comprehensively by legal systems in developing countries, specifically because so many persons accused of crime in these countries elect legal aid assistance. South Africa should set an example since its radical constitution explicitly aspires to correct injustices and inequalities of the past. Tolerance of grave imbalance in adversarial legal systems is an oppressive regime in a different guise. Governmental willingness to provide the Legal Aid Board of South Africa with additional resources to appoint experts will already go a long way to level the battleground of adversarial trials.

5 Conclusion

Prosecutorial participation in criminal investigation, the easy availability of skilled, experienced and qualified forensic experts, as well as extensive preparation of cases for trial allows the state to be in a comparatively strong position when instituting charges against an accused.

Conversely, counsels for the defence are only able to construct cases once the contents of the case file have been revealed to them. Additionally, many inexperienced counsel will not be able to identify

59 Roberts op cit (n9) 490.
60 Ibid.
the need for scientific expertise, or, even if this identification has been made, will they be able to obtain skilled and qualified experts. This places the adversarial legal battle at very imbalanced odds indeed.

The constitutional right to legal assistance in the United States of America has been extended to include the right to *effective* legal assistance. Many subsequent ineffective representation claims have been successful as a result of defence attorneys’ failure to obtain either scientific knowledge to test opposing expert testimony, or the failure to obtain competent defence experts. Since the Constitution of the Republic of South Africa explicitly provides for an accused person’s right to be represented *and* to adduce and challenge evidence, it is not unreasonable to expect constitutional challenges of similar claims of ineffective representation in the future.

The unreliable nature of forensic evidence also underlines the need for competent challenging of forensic scientific evidence in criminal trials. These challenges are mostly effected by way of cross-examination and adducing conflicting evidence. Cross-examination, however, is an empty instrument without the necessary scientific knowledge to properly address fallacies in opposing counsel’s evidence. This knowledge, however, is often beyond the defence attorney’s grasp in the absence of assistance by scientific experts.

The South African legal system, as well as that of other developing countries, should embrace the transformation of presentation and testing of forensic scientific evidence. While this promises to generate a great many problems and difficulties for judicial adjudicators in evaluating conflicting expert testimony, it is the first of many necessary steps in providing for an equal place of departure in achieving justice in adversarial trials.