

Lawyers and DNA: Issues in Understanding and Challenging the Evidence

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Abstract

Miscarriages of justice and reports from Australia and overseas indicate that some lawyers lack knowledge of problems associated with DNA evidence. Many lack understanding of the weaknesses in this evidence and how to uncover and deal with them in criminal cases. This article provides an overview of research and reports that have considered lawyers' role in dealing with DNA evidence. It then introduces a qualitative research project into how lawyers in two Australian jurisdictions deal with DNA evidence in criminal cases. It presents a number of preliminary, but critical, findings identified in interviews with legal practitioners in the Australian Capital Territory (ACT) and Victoria about their management of DNA evidence. In considering these findings, the article suggests that lacunae in practitioner knowledge and major difficulties lawyers face in dealing with DNA evidence may be attributable, in part at least, to systemic barriers to their gaining greater understanding of DNA evidence. Based on the preliminary findings and its literature review, the article points to future issues to be investigated by the project.

Introduction

Miscarriages of justice

There have been high profile miscarriages of justice in Australia in recent years that can be sourced to forensic evidence. These have occurred for a number of reasons: crime scene or laboratory contamination (Cauchi 2003; *R v Jama*); flawed assumptions made by those in the criminal justice process (*R v Jama*; *Button v The Queen*; *Mallard v The Queen*; Morling 1987; Shannon 1984); and disputes over 'reliable' scientific and forensic evidence (Morling 1987; Shannon 1984). This article considers the role of lawyers in preventing such miscarriages of justice and, more particularly, their role in preventing substandard and inadequately tested DNA evidence from being adduced in criminal trials. It is argued here, that in order to be able to do this, lawyers require both a penetrative understanding of such evidence and the skills necessary to expose potential problems associated with it.

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Two Australian Royal Commissions in the last 30 years have stressed that lawyers have an obligation to ask detailed and probing questions of forensic scientists, their task being to unmask any flaws in their evidence and to counter any preconceptions fact-finders may have about the unproblematic nature and veracity of that evidence: Shannon (1984) reporting on the problems arising from the use of scientific evidence in the criminal case of Edward Splatt; and Morling (1987) reporting on the expert evidence in Lindy Chamberlain's case. Further discussion of the role of lawyers in this regard is discussed in Sangha, Roach and Moles (2010:235).

Increasingly, modern trial lawyers are being confronted with complex DNA evidence that may involve new areas of scientific analysis and interpretation. For example, in the Australian Capital Territory (ACT) and Victoria¹ lawyers have had to deal with issues of transference (*Hillier v The Queen*), mixtures (*R v Meyboom*), contamination (*R v Jama*) and the question whether DNA alone may provide a proper foundation for a finding of guilt beyond reasonable doubt (*Forbes v The Queen*). Because lawyers have a key role in safeguarding the primary human right of an accused to a fair trial, they have a duty to ensure that any DNA evidence that is adduced is sound, properly scrutinised and justifiably admitted as reliable evidence. This role can only be discharged if they have a sound working knowledge of DNA evidence.

This article introduces a research project that is currently being undertaken on lawyers and DNA evidence in criminal trials. The project was prompted by the relative paucity of research in this area. To date, research into the use of DNA evidence in criminal cases has focused primarily on other key players in the curial process: juries (Goodman-Delahunty and Hewson 2010; Wheate 2007; Smith, Bull and Holliday 2011; Briody 2002; Briody 2004); judicial officers (Freckleton, Reddy and Selby 1999; Freckleton, Reddy and Selby 2001; Briody 2002; Briody 2004); and forensic scientists (Wheate 2007). This project explores the particular challenges posed by DNA evidence for lawyers. Specifically, it seeks to gauge how their perceptions and levels of knowledge of DNA evidence affect their ability to discharge their obligations to test and gain the exclusion of defective evidence and to make DNA evidence comprehensible to fact-finders. Based on these findings, the study will then explore the educational opportunities and resources available to lawyers to learn about DNA evidence and evaluate (based on information supplied by lawyers) those that may be most useful to advocates in coping with and managing DNA evidence in the criminal trial context. Further, they indicate that there might be systemic impediments to realising the recommendations of earlier research and reports. These preliminary findings, together with the literature review, point to future research issues to be investigated by the project.

This article begins in Part 1 by explaining the background and rationale for the research project. It considers earlier research and state-instituted investigations that have considered the nature of lawyers' role in relation to DNA evidence and that have also identified some of the problems lawyers experience in fulfilling that role. The latter is the particular target of investigation of the project introduced here. Details of that project are provided in Part 2 of this article, which outlines its research aims, methodology and some of its preliminary findings. Although full coding and data analysis is not yet complete, it has nevertheless been possible to identify emergent themes from the preliminary data analysis conducted to date. Those findings tend to confirm the challenges specific to lawyers identified in earlier research. They also suggest that a 'one-size-fits-all' approach to tackling those problems may not achieve their resolution.

¹ This research focuses on the ACT and Victoria because the industry partners for the PhD scholarship that funds this research are located within these two jurisdictions. See the Acknowledgements at the end of the article for the list of industry partners for this research.

Part 1: DNA evidence and the criminal justice system

Only a small number of studies to date have investigated lawyers' experiences with expert evidence generally (Woskett, Coyle and Lincoln 2007; Findlay and Grix 2003) and/or with DNA evidence specifically (Grace et al 2010; Findlay and Grix 2003). Nevertheless, a number of themes emerge from these studies of relevance to the current project. Further, research investigating other participants in the criminal justice process has also signalled points of investigation for the present study. In broad terms, these themes and points of investigation centre on problems in understanding and communication. The issues relating to communication involve both the communication of information, concepts and ideas, and communication between participants in the criminal justice process — for example, between lawyers and forensic scientists. The relevant research is outlined below. Consistently, this body of work emphasises the need for lawyers to know more, to challenge more and to improve their capacity to explore DNA evidence in adequate depth.

Existing research on trial participants' experience with DNA evidence

Lawyers

Some of the most significant challenges lawyers face in dealing with DNA evidence arise from their own perceptions of its reliability and from the mismatch between their attitude to and understanding of this evidence, and that of jurors and forensic experts. For example, a multi-disciplinary study based in New Zealand, conducted by the Institute of Environmental Science and Research Ltd (ESR) (Grace et al 2010) found that Crown Prosecutors incorrectly interpret forensic scientists' evidence about the statistical 'likelihood ratio' of correspondence between forensic samples as establishing with 'certain truth' that the samples are from the same source. In contrast, when members of the lay public are confronted with the same 'likelihood ratio' their confidence in the certainty of the correspondence is shaken, which then causes bafflement, confusion and often, erroneous misinterpretations of the evidence. These findings are significant for the present study because they demonstrate that jurors would benefit from clear guidance in the assessment of DNA evidence from all those dealing with it before them. In the context of the adversarial criminal trial, this may be difficult to achieve. It is well nigh impossible, however, if counsel harbour misconceptions about, or are prone to misinterpret, the expert evidence. Yet, because the particular role of Crown Prosecutors in the criminal trial is that of a 'minister of justice' whose duties include assisting in the 'attainment of justice between the Crown and the accused' (*Whitehorn v The Queen* at 675 and see, generally, Gans et al 2011:486–9), they arguably have an obligation to proceed from an accurate interpretive position when addressing the jury on the meaning of DNA evidence. As Wheate notes (2008:124), it is insufficient that the expert witness alone understands how to interpret the evidence, it is also necessary for the lawyer eliciting the evidence from the witness to comprehend it — otherwise the jury may be misled into misinterpreting it. One of the issues to be explored by the present study is how this is to be achieved.

In their review of the *Crimes (Forensic Procedures) Act 2000* (NSW), Findlay and Grix (2003:270) similarly noted a 'prevailing ignorance amongst many lawyers and judges about the nature and potential of DNA evidence'. As with the New Zealand research, Findlay and Grix encountered an attitude of widespread trust amongst legal practitioners towards DNA evidence. They, therefore, envisage a future for DNA evidence where the science will be less likely to be routinely challenged, where the introduction of convincing DNA samples will increasingly be accepted, and where reluctance to challenge this evidence will give it a degree of legitimacy that not only immunises it from challenge, but also renders it a crucial element

for the prosecution case, particularly where that case is relatively weak (Findlay and Grix 2003:270, 276). Ignorance and trust can be a dangerous mix in the criminal trial context.

In combination, these two studies inspire the inference that lawyers' ignorance of DNA evidence renders them not only poorly equipped to challenge it, but also without an appreciation that it may be necessary and possible to do so. For the purpose of the project presented here, this points to the need to uncover the precise basis and nature of lawyers' ignorance of, and trust in, DNA evidence, and what might be done to reduce them. While Findlay and Grix (2003:270) outlined how DNA evidence is used to meet 'particular evidentiary exigencies', the major problems associated with it and how they might be ameliorated, they did not engage, except at a general level, with the more particular problem of lawyers' (mis)understanding of DNA evidence or the question of how they are to be equipped to expose any potential weaknesses in it. In particular, they did not address key aspects of the communication problem (see further below). The present project seeks to fill these lacunae in our knowledge.

Juries

There is now a significant body of research establishing that jurors attach great importance to DNA evidence (see for example Wheate 2010; Findlay and Grix 2003; Podlas 2005; Briody 2002, 2004 and the studies referred to therein). Jury studies have highlighted the desirability for legal practitioners to be well versed in DNA evidence and the problems it presents for juries. The major need here appears to be for lawyers to bring that knowledge to bear to combat jurors' misconceptions about the significance of DNA evidence and then to equip them with the means to assess its value accurately. The nature of these tasks is revealed by key findings of an Australian Institute of Criminology (AIC) study (Goodman-Delahunty and Hewson 2010; see also Wheate 2010), which indicates that jurors' knowledge of DNA evidence is low. The AIC study, nevertheless, found that in cases where the prosecution adduces DNA evidence, there is an increased likelihood of conviction, and in fact, conviction rates are highest among jurors with the least knowledge of DNA evidence. Conversely, the accuracy of DNA knowledge was found to be associated with a likelihood to acquit. The study also found that with tuition, juror understanding of DNA evidence increases while concomitantly their trust in it decreases, as does the force of the evidence. It was further suggested that the traditional oral mode of presenting expert evidence may be the least effective in imparting an understanding of it and that increased incorporation of visual aids may enhance juror understanding. All these findings have implications for the way that counsel seek to achieve the communication of DNA data and expert opinions to fact-finders.

So too do the findings of Findlay and Grix (2003:274–6) that jury confusion about DNA evidence and uncertainty about how much weight to give it relative to other evidence may be attributable to its manner of presentation at trial, including how it is elicited from witnesses and the degree to which it is contested. Additionally, many of the jurors surveyed for the study had strong pre-existing preconceptions about how determinative of guilt DNA evidence is. This places lawyers in the difficult position where they have to present 'evidence ... to jurors who have already formed often incorrect ideas about its meaning and potential impact' (Findlay and Grix 2003:276). It is critical, then, that lawyers understand the source(s) of jurors' potential comprehension difficulties and how to achieve the accurate and comprehensible communication of complex DNA information. These difficulties have recently been amplified by the High Court decision in *Ayugrul v The Queen*. There, the High Court rejected defence counsel's submission about how the results of DNA testing should be expressed to the jury to ensure that jurors do not accord it too high a degree of certainty in

identifying the accused as the perpetrator. In rejecting this submission, the Court refused to have regard to the expert research on which it was based (*Aytugrul v The Queen* at [20]–[35]).

Forensic scientists

Deficits in lawyers' communication practices and comprehension have also been identified in studies involving forensic scientists. For example, Wheate's (2008) analysis of forensic scientists' experiences with and perceptions of the Australian criminal legal system found a high level of dissatisfaction with lawyers' modus operandi. Forensic scientists complained that lawyers have an inadequate grasp of forensic results, which they attributed to inadequate pre-trial preparation. Specifically, they were critical of lawyers for failing to discuss forensic reports with them before trial, because this restricts lawyers' ability to identify weaknesses in and limitations of reports. They may also fail to appreciate the extent of the scientists' expertise and precisely to what they are able to testify. Failure to communicate with scientists before trial also reduces lawyers' knowledge of scientific terminology, which, in turn, limits their ability to ask appropriate questions and to rebut any misleading information elicited by the opposing side.

Lack of pre-trial communication also generates misunderstanding of particular scientific principles that apply in individual cases and may not be transferable to others (Wheate 2008; Walsh 2005). A failure by lawyers to demonstrate comprehension of the various roles within crime scene investigation and laboratory processes was also a concern because it resulted in misunderstandings about the demarcation of scientific work and consequent inappropriate questioning. In fact, forensic scientists sourced the major part of their frustration with the legal process to lawyers' failure to communicate properly with them in preparation for trial. So, relevant information may not be imparted and irrelevant questions may instead be asked.

The judiciary

Inadequate and inappropriate questioning of expert witnesses has also been identified as a matter of concern to judicial officers (Freckelton, Reddy and Selby 1999; Freckelton, Reddy and Selby 2001). Freckelton, Reddy and Selby's comprehensive surveys of Australian judges and magistrates encountered widespread concern about advocates' poor forensic skills hindering jurors' abilities to function as effective fact-finders. There was, thus, overwhelming support for lawyers to receive additional training in order effectively to discharge their roles as examiners and cross-examiners (Freckelton, Reddy and Selby 1999:5). Additionally, judicial officers echoed the findings of the AIC study outlined earlier, in expressing the view that advocates should include more non-verbal forms of communication in the presentation of evidence to ease the task of comprehension for jurors.

Reviews of the forensic process and recommendations for lawyers

In addition to the body of work outlined above, a number of Australian and international reviews of DNA evidence have informed the study introduced here. Formal reviews of the use of DNA in the criminal justice system have ranged from investigations or inquests into individual cases, to reviews of legislation and the investigation of organisations responsible for delivering forensic services. A snapshot of relevant reviews is given below. Concern about the management and presentation of DNA evidence is not new. It is also on going. The reviews presented here range across 17 years, from 1993 to 2010. However, previous commissions and other enquiries have engaged in similar investigations (Shannon 1984; Morling 1987; UK Home Office 1993). They have investigated miscarriages of justice, disquiet in the legal or scientific communities about expert evidence, and dealt with concerns from the wider community about the interaction between science and law. For the

purpose of the present study, they all highlight the need to consult lawyers about their experiences with DNA evidence and to identify in increased detail and with precision the challenges it poses for them.

Runciman Commission 1993

The use of DNA in criminal justice proceedings was assessed by the United Kingdom's (UK) Royal Commission on Criminal Justice ('Runciman Commission') in 1993 (UK Home Office 1993). Although this Report was produced almost 20 years ago, it reflects themes relating to the collection, storage and interpretation of forensic evidence and identifies inadequacies in the way advocates deal with DNA evidence, that are repeated in the 2009 National Academy of Sciences (NAS) and 2010 Vincent reports (see further below) and parallel the findings of the research outlined above.

Issues relating to communication were of central concern to the Commission. Accordingly, it stressed the need to enforce strictly the prosecution's duty of disclosure to the defence, particularly when what is in issue is access to forensic records, notebooks of forensic practitioners and information that may not have been used by the expert in reaching the conclusions expressed in court (UK Home Office 1993:153–4). The Commission made recommendations for defence counsel to gain access to experts and laboratories to improve their ability to test Crown data (UK Home Office 1993:155).

Of equal concern was the lack of communication between prosecution barristers and forensic experts. The Report, therefore, encouraged greater interaction between these parties (UK Home Office 1993:153). This is a concern also raised by Wheate (2007, 2008) and by the NAS (2009) and Vincent (2010) reports. Recommendations focused on bringing solicitors, experts and barristers together in interdisciplinary exchanges in order to help advocates gain a greater understanding of forensic evidence (UK Home Office 1993:161). The *Criminal Appeal Act 1995* (UK) was enacted as a result of the Commission's Report and the Criminal Cases Review Commission was established in January 1997 (Urbas 2002 citing Walker and Starmer 1999).

Victorian Parliament Law Reform Committee 2004

In 2004, the Victorian Parliament Law Reform Committee (VPLRC) (2004:v) received a reference to investigate the 'collection, use and effectiveness of forensic sampling' and the 'use of DNA databases in criminal investigations' — the objective being the development of recommendations aimed to facilitate more effective forensic sampling and improved investigation and detection of crime. Part E of the inquiry focused on the use of DNA in criminal cases and recommendation 11.6 dealt specifically with improved legal education about DNA evidence for judicial officers (VPLRC 2004:404).

The Victorian Government gave in-principle support to this recommendation and indicated that a range of initiatives targeting legal education were in place. These initiatives were not outlined in any detail in the Government's response (Victorian Government 2004).

National Academy of Sciences (NAS) Report

The NAS released its report, *Strengthening Forensic Science in the United States: A Path Forward*, in 2009 ('NAS Report': NAS 2009). Its preface recognises that systemic and scientific advances are needed in a number of forensic disciplines to ensure the provision of reliable scientific results, to establish enforceable standards and to promote a best standard approach that is consistently applied (NAS 2009:xix).

The NAS Report stressed the need for further education and training for all parties involved in the forensic science system in the United States (US), including lawyers. Recommendation 10 stated:

NIFS [the National Institute of Forensic Science] should also support law school administrators and judicial education organizations in establishing continuing legal education programs for law students, practitioners and judges (NAS 2009:28).

NAS recognised that having a ‘checklist’ for the admissibility of scientific evidence does not provide a sufficient guarantee of reliability for expert evidence and that the approaches employed by different forensic science disciplines are not always understood by the judiciary or legal practitioners. Any advancement in forensic science, the NAS Report argued, should be relayed directly to legal scholars and practitioners (NAS 2009:27).

The NAS Report contained a number of significant messages for lawyers, prominent among which is a call for a better relationship between lawyers and scientists (NAS 2009). It also noted that although the science of DNA may now be well established, lawyers are still responsible for investigating and, if need be, challenging DNA evidence on other grounds — its collection, processing, handling and storage. The NAS Report made recommendations similar to that of the Vincent Report (Vincent 2010, see below) on the education of lawyers in this area.

Vincent Report

Former Supreme Court Justice, the Honourable Frank Vincent, released the *Inquiry into the Circumstances That Led to the Conviction of Mr Farah Abdulkadir Jama* in 2010 (Vincent 2010). This Report investigated the factors that led to a young man’s wrongful conviction for rape in Victoria. It implicated almost every sector of the Victorian criminal justice system in that conviction (Vincent 2010).

Mr Jama was convicted for a rape that never took place and was sentenced to six years’ imprisonment. He served 16 months’ imprisonment. Cervical swabs taken from the complainant, allegedly contained semen consistent with Mr Jama’s profile on the DNA database. This was the sole evidence implicating Mr Jama. There were no witnesses, no fingerprint evidence, no CCTV footage at the scene or physical or other biological evidence to corroborate the DNA result (Vincent 2010:17).

The decision to proceed on DNA evidence alone was trenchantly criticised in the Report. Vincent found that the DNA evidence was perceived to possess ‘an almost mystical infallibility that enabled its surroundings to be disregarded’ (2010:11). Only a matter of weeks before the appeal case was heard did the parties realise the potential errors in the investigation and interpretation of the DNA results. There was evidence that the police officer responsible for the case had enquired into the likelihood of contamination (Vincent 2010:24), but was reassured that this was not possible. On the basis of this reassurance, the officer prepared a brief of evidence (Vincent 2010:30).

In fact, Mr Jama had been in the same forensic collection room as the alleged victim less than 40 hours prior to her consultation. He was there in relation to an unrelated matter. Both he and the complainant had forensic tests taken by the same attendant. Subsequently, that room was found not to have been adequately cleaned between the taking of the two samples (Vincent 2010). The Vincent Report is unequivocal in its critique of those involved in the investigation and prosecution. It states: ‘at virtually every point, and by almost everyone involved, [the DNA evidence] was handled with so little insight into the

issues which it presented that no need was seen to explore further or conduct research into them' (Vincent 2010:11).

This case and the Vincent Report have wide-ranging implications for the Australian legal profession and any case involving DNA evidence. Recommendations from the Report cover scientific procedures for Crisis Care Units, cleaning procedures for the Victorian Institute of Forensic Medicine and reporting requirements for police investigators and lawyers (Vincent 2010:48–56).

Recommendation 10 calls for the Judicial College of Victoria, the Law Institute of Victoria and the Victorian Bar Council to conduct courses for legal practitioners and members of the judiciary about the nature and appropriate use of DNA evidence in criminal cases (Vincent 2010:56). Following *R v Jama* and the Vincent Report, alarm bells should now ring whenever DNA evidence is offered as the sole or decisive evidence of guilt. *R v Jama* establishes the clear responsibility of legal bodies and lawyers to provide and undertake training programmes about potential threats to the integrity of DNA evidence. It highlights the importance of asking the right questions pre-trial and insisting on full disclosure of all potentially relevant information by those engaged in the collection of DNA data in criminal investigations.

These reviews and the body of research outlined above set the background to the research project introduced in Part 2.

Part 2: The present study

Aims

The general aim of the project is to investigate lawyers' experience, use and understanding of DNA evidence in criminal cases in two Australian jurisdictions: Victoria and the ACT. It has four, more specific aims:

- to investigate the extent of advocates' understanding of the strengths and weaknesses of DNA evidence. As is clear from the research and reviews outlined above, such understanding is of key significance in preventing the occurrence of wrongful convictions.
- to identify statutory provisions and practice directions for lawyers relevant to the presentation of DNA evidence in criminal trials in Victoria and in the ACT and to consider the degree of guidance and control they provide in managing DNA evidence in trials.
- to explore lawyers' current modus operandi in using and managing DNA evidence to identify potential areas for improved practice.
- to identify Australian and international educational programs or continuing professional development courses for lawyers on DNA evidence. The experiences of lawyers in attending these courses and programmes will be investigated to assess their value for lawyers.

Method

The research project uses semi-structured interviews and focus groups to investigate lawyers' experiences of DNA evidence. The research cohort consists of Victorian and ACT lawyers working within the criminal justice arena, Supreme Court judges and forensic scientists working in the ACT and Victoria. The preliminary themes extracted here come from interviews with lawyers. The lawyers interviewed for the study were drawn from

criminal justice institutions and the private bar in both Victoria and the ACT. Criminal lawyers working for the private bar who identified themselves as criminal law specialists were contacted individually, and Directors or Senior Managers of government justice agencies were the liaison point for contact with government lawyers. In the ACT, these were the Director of Public Prosecutions (DPP) and Legal Aid (ACT); and in Victoria, the Office of Public Prosecutions (OPP) and Legal Aid (Victoria).

The success of empirical research of the kind reported here depends upon the choice of an appropriate research framework and methodology. The present study is positioned within a critical realism framework in that it seeks to answer ‘how’ and ‘why’ questions about lawyers’ behaviour, while acknowledging the subjectivity of the researcher’s interpretation (McKerchar 2010). This makes the research non-positivist, as it asserts no one objective ‘truth’ — only the truth as interpreted by the researcher and the participants involved in the study. The use of interviews enables an understanding to be gained of lawyers’ experiences, which the researcher interprets applying the lens of the project’s research objectives (Minichiello, Aroni and Hays 2008:11).

In order to conduct research from within this framework, an inductive and applied qualitative method targeting reform-oriented outcomes is used to explore the research aims. Applied research investigates a problem, and as Neuman (2006:26) describes it, is ‘relevant, aimed at practitioners, participants or supervisors and of variable rigour’. To ensure the outcomes of an applied research study are academically valuable, the focus must be on both a usable outcome for lawyers (hence, the reform-orientation) and sound research design and methodology.

The interview and focus group data collection strategy was chosen to gain in-depth insight into the personal experiences and opinions of lawyers. The reports and case studies discussed earlier made recommendations whose aim is to improve the quality of expert evidence. These recommendations have not gained traction within court practice. Lawyers have a central role in implementing those recommendations and are, therefore, uniquely positioned to reveal why this has not occurred. Interviews and focus groups clearly provide the best means to obtain insight into the issues lawyers face in dealing with DNA evidence, and how they might manage such evidence in criminal cases. Semi-structured interviews allow participants, in addressing the projects’ research questions, to reflect on and discuss the realities of their practice and the constraints that may prevent them from engaging rigorously and critically with DNA evidence.

The focus group method allows for the collection of different groups’ particular perspectives (Liamputtong 2009). For example, focus groups with Supreme Court judges allow for reflection by senior members of the legal community on the practice of lawyers in court. Similarly, focus groups with forensic scientists who regularly appear as expert witnesses will uncover a different perspective of lawyers’ understanding and presentation of the evidence. No focus groups have been conducted to date. It is envisaged that they will be completed later in 2012.

In total, 40 interviews with lawyers have been conducted to date, with interviews with forensic scientists and a small number of ACT lawyers still to occur in 2012. Interviews are transcribed and preliminary data analysis is conducted during transcription. Preliminary analysis of interviews with lawyers has identified some emergent themes, which are outlined below. It is stressed that the identification of these themes is, at this stage, still tentative. They will be explored in finer and firmer detail when all data have been collected and fully coded. Not until that occurs can thematic analysis be completed.

Preliminary findings and issues for future research

A number of preliminary themes have emerged from the analysis to date of the interview data. They reflect observations made in the literature review above and suggest additional directions for analysis. They also point to potential obstacles to achieving the recommendations made in earlier research and reports.

Level of lawyers' knowledge and lacunae in their understanding

Only a small minority of lawyers stated in interviews that they feel that they know and understand everything they need to about DNA evidence. The overwhelming majority of lawyers said they did not know enough. For these lawyers, the major challenge was in understanding and challenging random match probabilities and statistics used by experts in forensic reports or in court. For example, two interviewees stated:

Well when it comes to the numbers and stuff like that, well that is pretty hard, you need somebody who is pretty switched onto it, so yes I've received evidence like that, you know, this sample is likely to be one in whatever, ok all that stuff is a set of meaningless numbers really... (L1, defence)

I suppose one of its greatest downfalls is the probability stuff, and trying to get that across to the jury. (L2, prosecution)

This clearly mirrors earlier research findings concerning lawyers' confusion concerning the statistical 'likelihood ratio' of correspondence between forensic samples and difficulties in conveying its real import to juries. It points to the need for the current project to unpick this lack of confidence and discover whether there are workable strategies to ameliorate it and position lawyers to present this evidence lucidly and accurately.

Access to expert witnesses

In conformity with earlier research findings, it is clear from the preliminary analysis for this project that lack of communication between lawyers and expert witnesses presents a considerable barrier to lawyers' obtaining a genuine understanding of the strengths and weaknesses of DNA evidence. This is particularly the case for defence counsel. Defence lawyers stated that limited contact with experts reduces their ability to understand and challenge DNA evidence. In contrast, prosecution lawyers, with greater access to expert witnesses, feel that consulting experts in individual cases helps them to understand and present DNA evidence.

The present analysis also suggests that the lack of communication may proceed from systemic problems that may be difficult to overcome. For example, very few of the defence lawyers interviewed have said that they are able to consult state forensic scientists, although it is their right to do so. In this regard it is constraints imposed by the adversarial system itself and its embedded behavioural norms that inhibit lawyers' communication with forensic experts. Additionally, lawyers' lack of access to expert witnesses may be sourced to financial constraints. For example, Legal Aid and defence practitioners stated that their knowledge is inadequate because of the limited budgets available for engaging experts. Funding limitations mean that Legal Aid lawyers engage their own experts in only the most extraordinary circumstances and the most serious cases. Analysis to date suggests that financial factors have a complex impact on the ability of defence counsel to communicate with expert witnesses. Lawyers may only gain access to expert assistance in understanding DNA evidence if they can justify doing so in financial terms. At the same time, they may be

unable to supply that justification because of their lack of expert advice. As one interviewee explained:

If you're going to engage an expert, you've got to be able to justify why you're engaging that expert ... because of funds and unless you have an idea why the evidence is challengeable, you won't be able to justify it. It's a circle. (L13, defence)

Preliminary analysis also suggests that other systemic factors like limited time to prepare for trials work against the achievement of effective communication between lawyers and expert witnesses and that there is a level of frustration about such fetters on advocates' ability to gain a fuller understanding of DNA evidence. Clearly, in the face of such systemic barriers, recommendations that lawyers increase their level of communication with forensic scientists may not be achievable.

This begs the question whether there is a realistic way to tackle these problems. The answer to this question has clear implications for the attainability of recommendations made in earlier studies and reports. It may be that systemic factors present insurmountable obstacles to adequate communication between lawyers and expert witnesses in individual cases. For the research project, it identifies the need to explore the possibility of diminishing systemic barriers to communication and learning about DNA evidence in ways that do not pose an insurmountable financial burden on clients, lawyers or legal aid authorities. The realities of practice will, therefore, inevitably direct and frame the thrust of this study and its recommendations.

Communication by experts

It also appears from preliminary analysis of interview data that lawyers' effective communication with expert witnesses is impeded by their lack of understanding of scientific language. It was described by one interviewee as 'gobbledy gook' (L13). This confirms earlier research and highlights the magnitude of the problem facing lawyers. How such communication problems might be ameliorated will be an aspect of interviews with forensic scientists to be completed later in 2012.

Education

Lawyers were asked about the development of their knowledge on DNA and how they felt they could learn more. There was a mixed response, which is indicative of an uneven approach in DNA education to date. This is common in continuing legal education programs because they vary widely in their structure, content and approach. Some lawyers said that they learnt best from experts they consulted in specific cases and many said they did not have time to talk to experts and, instead, relied on scientific books or the internet. Some lawyers in a government organisation said they learn best from one lawyer in their office who has qualifications in science and experience in DNA matters. That lawyer, when interviewed, said that he had been consulted about most DNA cases in the office:

Any time there are any matters that involve DNA and are around me now come my way. I'm happy to help my colleagues with the basics and what it all means ... To help my colleagues realise that it's [DNA] a bit more subjective than that. (L35, defence)

When asked about how they might best learn about DNA evidence, the responses were as varied as the experience of the lawyers involved. Some indicated that an appropriately written text (significantly different to those currently available) would be the best source of information. Many interviewees indicated that they did not see the relevance of DNA courses run by legal providers. A common reason given for this is the inability to apply the general information given in these courses to specific cases being tried. A number of

interviewees would like access to a reliable resource if and when they have a case involving DNA evidence:

R1 – How do you see these formal education programs as part of continuing professional development?

L4 (prosecution) – Not useful. It changes too quickly. You need to SWOT up on this stuff when you need it. I don't want to SWOT up on DNA now for a case I'm going to do in four years.

These responses suggest that a 'one-size-fits-all' approach to education about DNA may not resolve lawyers' problems with it. From the preliminary findings, it is clear that a crucial component of the current investigation must be to ascertain how lawyers can effectively gain greater knowledge of DNA evidence, knowledge that will enable them both to communicate with experts and deal with such evidence at pre-trial and trial stages of criminal justice proceedings.

Summary

No conclusion in the traditional sense is offered here because this article has only an introductory purpose. The project introduced here has its background in government-instituted reviews and a body of research which establishes the central responsibility of lawyers in ensuring that DNA evidence is justifiably admitted in criminal trials and once admitted, understood by those asked to utilise it in reaching a verdict. That body of research has also indicated possible factors that may currently prevent lawyers from adequately fulfilling this responsibility. The project aims to contribute to existing knowledge of DNA evidence in two ways. First, it has a practical purpose. It is anticipated that lawyers will be able to use results from the study as a tool in preparing criminal cases involving DNA evidence. Preliminary analysis of interview data points to the need for reliable, accessible and intelligible resources for lawyers to help direct their learning on DNA. This project will pinpoint relevant information on DNA evidence and outline the most efficient educational programs and materials in place to improve their understanding in this area. In identifying opportunities for lawyers to engage with DNA evidence education and in assessing the usefulness of these training opportunities, an evidence-based and reform-oriented approach to educating lawyers will be suggested.

Second, the research will have theoretical relevance in identifying the difficulties, benefits and logistical problems faced by lawyers in Victoria and the ACT in understanding and using DNA evidence in criminal trials. In doing this, it will provide the basis for assessing the attainability of recommendations made in earlier studies and reports. These findings are likely to be relevant in all Australian jurisdictions.

Lawyers and the legal profession have a significant role to play in ensuring that triers of the facts in criminal cases do not misapply or misinterpret DNA evidence. They must also ensure that the DNA evidence adduced in criminal cases is reliable, adequately tested and that any weaknesses or flaws in it are exposed. It is only when lawyers have a genuine understanding and working knowledge of DNA evidence that they are capable of fulfilling this role. This project seeks to assist in the achievement of that objective.

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