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FORENSIC EVIDENCE: INSTRUMENT OF TRUTH OR POTENTIAL FOR MISCARRIAGE?*

The Hon. Michael Kirby AC CMG**

FORENSIC EVIDENCE IS NOT NEW

Forensic evidence is not new. The nature of many (if not most) crimes is that their perpetrators will try to hide their involvement. When questioned, they will deny guilt. They will assert innocence; that the authorities have got the wrong person; and that they have been treated unfairly. Sometimes, these allegations will be true. Sorting out the guilty from the not guilty is the obligation of the criminal justice system.

In the legal procedures of some jurisdictions, the investigatory process is mainly directed to extracting confessions of guilt from the mouth of the accused. This was so in previous centuries in our own legal system. Originally, physical torture was used to procure a confession which was seen as the most reliable means of establishing guilt. In some societies, admissions remain the principal object of the investigatory process. Up to the last quarter of the twentieth century, it was not uncommon, in the trial system in Australia, for evidence to be given by public officials that

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the accused had made admissions of guilt although not under oath and although the admissions were not corroborated. When these “verbals” were denied on oath by the accused, a difficult problem was presented for resolution.

All too often, the trial of the accused was then diverted into a side issue: not the guilt of the accused of the offence but the truth of the denial. In an attempt to avoid or minimise time-consuming and contestable investigations of this kind, the Australian legal system began to substitute greater reliance on technology. Sound and video recordings were introduced to minimise the contests over alleged confessional evidence. As well, scientific forensic testimony was gathered to enhance the objective demonstration of the accused’s guilt. The trial of criminal offenders in Australia is accusatorial in character. With few exceptions, it is for the prosecution, from first to last, to prove the guilt of the accused by the evidence which the prosecution propounds or any other evidence adduced in the trial. It is not generally the accused’s obligation (at least so far as the law is concerned), to prove his or her innocence.

As I shall show, a considerable weapon in the proof of criminal charges in Australia in recent decades has been the ability of the prosecution to adduce highly scientific DNA evidence, tendered to reduce significantly the risks of false accusations and unjust convictions.

Nevertheless, long before DNA evidence was available to prosecutors, they relied on forensic or scientific evidence of other kinds. A thread of the perpetrator’s hair under the fingernails of a deceased victim. A piece of clothing or other material found at the crime scene. Evidence of

peculiar implements that help to link the accused to the crime. Hand writing (even when disguised) gave birth to a special class of expert examiners. After the nineteenth century, the unique features of fingerprints recovered from the crime scene were increasingly used to help identify (or exclude) particular suspects. The study of blood types led to much expertise in that field. Skills in expert cross-examination of incriminating blood types was frequently claimed by John Mortimer's Rumpole of the Bailey. He often boasted of his forensic triumphs in the Penge bungalow murders.

TRADITIONAL FORENSICS: THE GRAHAM THORNE CASE

Perhaps the most famous instance of forensic evidence in Australia, before the advent of DNA, followed the abduction on 7 July 1960 in Sydney of the 8 year old son of Mr. and Mrs. Thorne, Graham. The Thornes had just been named as the winners of the Opera House lottery, established to raise money to build Joern Utzon's masterpiece. Not long after the abduction, the body of Graham Thorne was found, wrapped in a blanket, hidden at Clontarf Beach, in the northern suburbs of the city. Before discovery of the body, a single telephone call had been made demanding a ransom of £25,000. The demand was apparently made by an adult male. However, the call could not be traced. The NSW Police faced the seemingly impossible task of identifying the perpetrator.

Enormous pressures were placed on the Police to announce an arrest. The abduction and murder represented every parent's nightmare. And fortunately, this was one instance where superb forensic investigation secured that outcome:

1. The *Onkaparinga* blanket found with the boy's body had a distinctive design which was traced by the manufacturer to sales in a particular retail outlet in Melbourne. Police interviewed each of the 200 recorded purchasers. One of them indicated that she had given the blanket to a friend, the wife of Stephen Bradley, a resident of Sydney. Mrs. Bradley had just herself given birth to a child. But, of course, there were nearly 200 other potential purchasers to be tracked down, interviewed and eliminated;
2. Hairs were found on a portion of the blanket which expert evidence identified as a dog's hairs. The expert was most emphatic that it was not any dog, but a Pekinese breed. Stephen Bradley in fact owned a Pekinese dog. When, later, he sought to flee Australia, he made careful arrangements for his dog to be shipped to follow him to England;
3. On the day that Graham Thorne disappeared from a suburban street near Clontarf, a young boy, who later alerted police, reported that he had seen a person, who appeared to be acting suspiciously, near the scene and who drove off in an Azure Blue *Holden* sedan motor vehicle. The colour of the vehicle was distinctive. It was later proved that, on the day of the abduction, Stephen Bradley had owned a *Holden* sedan of the stated colour which he had sold very quickly after the day that Graham Thorne disappeared;
4. On the boy's body were found seeds which botanists narrowed down to those of two comparatively rare exotic trees. Police arranged for photographs of the tree types, identified in the Royal Botanical Gardens in Sydney. Detectives then interviewed postmen in the suburbs surrounding the place where Graham Thorne's body had been found. One postman immediately

identified two trees of the nominated kind. He took police to the Bradley home. The coincidence of finding such rare trees together in a single suburban home was striking; and

5. The sole of the boy's shoes was examined and found to contain a variety of mould. This indicated that he had probably been dead for some time, likely to have been killed within an hour or so of his abduction. As well, the shoe analysis picked up a distinctive pink mortar of the kind used in the building of houses in the suburb of Clontarf, including the one which had been occupied by the Bradleys. The police deduced that the body had been hidden under the Bradley home where collections of the mortar were found, deposited during its building.

As the police circle began to close around Stephen Bradley, based on the carefully collected scientific evidence, he sold up and left Sydney with his wife and children. When police were ready to pounce, it was discovered that he and his family were on a ship *en route* to England. He was planning to commence a new life there. A warrant for his arrest and an application for extradition from Ceylon was sent to Colombo to await the arrival of the vessel. The accumulated evidence established a sufficient case for the magistrate to order extradition. Stephen Bradley was returned to Australia on one of the early BOAC jet flights. He was charged in Sydney with the murder of Graham Thorne, tried and eventually convicted.

On the plane, Stephen Bradley allegedly confessed his guilt to the accompanying police. But if there was indeed a confession, it was denied at the trial. So-called 'verbal' confessions, unrecorded and uncorroborated, were common in police practice at that time. In the end,

the jury did not need to rely on the disputed admission. The coincidence of the accumulated forensic evidence gathered by the investigating detectives had produced an overwhelming and convincing case. The jury retired for little more than an hour. Stephen Bradley was found guilty and sentenced to life imprisonment. He died in prison eight years later of a heart attack. The case was a fine example of the painstaking collection of forensic evidence before the age of DNA evidence.

CRIMINAL INVESTIGATION AND THE ADVENT OF DNA

Fifteen years after the Graham Thorne investigation, the Australian Law Reform Commission (ALRC) was asked to produce a report on criminal investigation for the Federal Attorney-General¹. I had just been appointed the inaugural chairman of the Commission. The Commissioner in charge of that project was Mr Gareth Evans, later a member of Federal Parliament, and Federal Minister, including Federal Attorney-General. He is now the Chancellor of the Australian National University.

The ALRC project on criminal investigation demonstrated again the truism that virtually no field of law today can be expressed and reviewed without regard to any relevant technology. Thus, the recommendations of the ALRC included those involving telephonic warrants for the conduct of searches and seizures; telephonic interception in the collection of particular incriminating evidence; and sound and videotaped recordings of confessional evidence to police and other federal authorities.

¹ ALRC 2 (Interim), AGPS, 1975.

At the time of the ALRC report, the recommendation for such authentication of confessions to police was generally resisted by the Australian police services and, more particularly, by police unions. Police resented the suggestion that there was a special need to corroborate the oral testimony of police witnesses. However, a long line of cases in the High Court of Australia demonstrated the special problems of so-called "verbals", unconfirmed oral evidence of police deposing to admissions or confessions allegedly made by suspects².

Eventually, this problem led to judicial decisions favouring rejection of such evidence and suggesting the provision of sound and video recordings. Such decisions, in turn, took lawmakers back to the proposals of the ALRC and other law reform bodies. Eventually, sound and video recordings were introduced as a regular and, eventually, obligatory feature of police interrogation of suspects. As the ALRC had suggested, in its 1975 report, these recordings quickly became a powerful tool in the forensic armoury of police and other investigating officials.

Nowadays, it is difficult to imagine the conduct of official investigations in Australia without the use of such technology. The general acceptance of the technology has revolutionised the provision of reliable evidence to courts. It has substantially removed the problem of police "verbals"³. It has increased confidence in police testimony and enhanced rates of conviction. This innovation demonstrates the way in

² *McKinney v The Queen* (1991) 171 CLR 468 and the cases there recorded. They included *Driscoll v The Queen* (1977) 137 CLR 517; *Wright v The Queen* (1977) 115 ALR 305; *Carr v The Queen* (1988) 165 CLR 314 and *Duke v The Queen* (1989) 180 CLR 508.

³ Cf *Kelly v The Queen* (2004) 218 CLR 216; *Nicholls v The Queen* (2005) 219 CLR 196 at 208 [10], 237-238 [98]-[100], 257 [150]-[152], 275-276 [214]-[217]; cf at 309-310 [332]-[335]; *Carr v Western Australia* (2007) 82 ALJR 1.

which contemporary technology can often support the work of public agencies in prosecuting offences, clearing the innocent and bringing guilty suspects to justice.

The foregoing developments in the field of criminal investigation have roughly coincided with important changes in other particular techniques of forensic science.

It was in 1953 that two scientists working at Cambridge University (James Watson and Francis Crick) described DNA - the basic building blocks of our genetic makeup⁴. In the 1970s, forensic analysts began to propose blood identification techniques in order to enhance biological linkages to evidence. This research led to a breakdown of blood groups into subgroups based on enzyme categories. This, in turn, led to further developments in the 1980s when the British geneticist Mr (later Sir) Alec Jeffreys used DNA for the first time to establish the probable identity of a criminal suspect⁵.

DNA analysis has continued to make steady progress since the 1980s as an adjunct to police and other official investigations. Jeffreys's DNA profiling techniques were copied within a couple of years in the United States of America and Australia. The result has been a potent enhancement of accurate investigation, leading to what is effectively a revolution in the techniques of police and other public agencies in the way in which they establish accusations against suspects.

⁴ J D Watson and F H C Crick, "Molecular Structure of Nucleic Acid: A Structure for Deoxyribose Nucleic Acid" (1953) 171 *Nature*, 737-738.

⁵ Described in J Fantino, "Forensic Science: A Fundamental Perspective" in *Police Chief*, Vol 74 No 11 (November 2007).

It would not be true to say that forensic science first arrived in the courtrooms on our legal tradition with the work of Sir Alec Jeffreys. As I have shown, by reference to the prosecution of Stephen Bradley, the use of fingerprints and analysis of hair follicles, handwriting comparisons and other specialised investigations were well established within expert disciplines long before DNA came along. Moreover, specialist evidence on clothing fibres, soil and mould particles and other forensic evidence of the types described were established feature of official investigative techniques. Nevertheless, because of the unique characteristics of DNA, the advent of its technology has been of the utmost importance. It can be expected that the importance of DNA evidence in criminal prosecutions will be increasingly recognised.

THREE HIGH COURT CASES AND FORENSIC EVIDENCE

The Mallard case: When in 1984 I left the Law Reform Commission, and returned to the courts, I was soon immersed in judicial decision-making that reinforced my appreciation of the impact of technology on contemporary legal practice. Several cases in recent years have still further reinforced the conclusion that I derived during my service in the ALRC. Especially in criminal trials, technology could be seen as playing an important part in the proof of guilt or, conversely, the establishment of innocence. In criminal appeals it increasingly became the role of courts to examine such evidence. So it was in the New South Wales Court of Criminal Appeal after 1984 and in the High Court of Australia, after my appointment to that court in 1996.

In 1995 in *Mallard v The Queen*⁶, Andrew Mallard was convicted in Western Australia of the murder in 1994 of Mrs. Lawrence, the proprietor of a jewellery shop in Perth. It is now accepted that he was innocent of the murder for which a jury found him guilty. Immediately after his conviction, Mr. Mallard appealed to the Court of Criminal Appeal of Western Australia. That court dismissed his appeal and he sought special leave to appeal to the High Court. This was refused. He proceeded to serve his sentence of life imprisonment. However, he always protested his innocence.

Fortunately, Mr Mallard's family, a group of supporters and *pro bono* lawyers were sufficiently concerned about the case to persist with legal challenges to the conviction. Eventually a petition was presented to the State Governor for the exercise of the royal prerogative mercy on the basis of unsatisfactory features of the trial. The petition was referred by the Attorney-General to the Court of Appeal. That Court rejected the petition and once again confirmed the conviction. For a second time, Mr Mallard invoked the appellate jurisdiction of the High Court of Australia. Once again, he sought special leave to appeal. Special leave was granted.

When I was later allocated an assignment to participate in the appeal, I naturally checked who had been sitting in the earlier unsuccessful application for special leave. The record showed that the judges on that occasion were Justices Toohey, McHugh and myself⁷. This fact was disclosed to the parties. None of them objected to my participating in the second appeal. I later specifically checked the transcript of the

⁶ (2005) 224 CLR 125.

⁷ *Mallard v The Queen* (24 October 1997), noted (1997) 191 CLR 646.

first application and found that the submissions had been based substantially on an argument that the conviction was unsafe because the trial judge had excluded polygraph (“lie detector”) evidence, tendered by Mr Mallard, which was said to lend support to his protestation of innocence. Such evidence is sometimes used in the United States. In Australia, until now, it has not generally been regarded as sufficiently reliable to warrant admissibility. In this sense, the rejection of the first application for special leave to appeal was unsurprising. But it is worth noting that it rested on a part of the forensic evidence proffered in the case by the accused.

The second appeal hearing was quite different. There was indeed forensic evidence which, it was claimed, had not been properly disclosed to the legal representatives of Mr Mallard at the trial. Most particularly, this included evidence concerning chemical analysis of the accused’s clothes, supposedly for the presence of remnants of saltwater in which it was hypothesised he had washed his blood-stained clothes after the murder. There was also evidence of the spattering effect of the administration of a spanner, like that allegedly used to kill the victim, upon a pig's head, said to demonstrate a distribution of blood inconsistent with evidence present at the scene of the crime.

In terms of legal principle, the *Mallard* case stands for the obligation of a prosecutor to disclose to the accused evidence in the prosecution brief (even if unfavourable to the prosecution) which may be relevant to a determination of whether the prosecution has proved the guilt of the accused beyond reasonable doubt. In an age of scientific and technological investigations, it is inevitable that the prosecution (with

access to governmental agencies) will generally have advantages over those enjoyed by the defence in gathering, analysing and understanding forensic evidence. A recognition of this fact makes the reasoning in the *Mallard* case both timely and important for the growing use of forensic evidence.

However, for me, the most important feature of the *Mallard* appeal was the demonstration of the near impossibility of reconciling the established movements of Mr Mallard on the day of the offence that showed that, in terms of the time of the homicide and the times of the accused's sightings, the factual mosaic did not fit together. This was a feature of the evidence which, with more time and clearer focus, should have been brought out in the earlier appeals. Ultimately, it did not depend on laboratory or scientific proof. It demonstrated once again the imperfections of any system of criminal justice, including our own⁸.

As a judge of a final court of appeal, the *Mallard* case reminded me once more of the heavy obligations that rest upon all judges to be vigilant for error and possible miscarriages of justice so that we can prevent or repair them wherever possible. Naturally, I asked myself whether, with further assistance and more time to examine the application ten years earlier, I might have spared Mr Mallard a decade of needless and unjustified imprisonment. In the current age, it is this very concern to avoid miscarriages of justice that has increased the search for scientific evidence to enhance the proof of guilt. To the extent that we can rely on objective, demonstrable and scientifically accepted evidence, tending to prove the guilt of an accused person, we

⁸ Colleen Egan, *Murder No More: Andrew Mallard and the Epic Fight that Proved his Innocence*, Allen & Unwin, Sydney, 2010, 200.

reduce the risks of wrongful convictions. That is a goal of every self-respecting, contemporary criminal justice system.

The Gassy case: Other cases have come before the High Court of Australia which illustrate the importance of forensic evidence but also indicate that, sometimes, such evidence is not determinative on its own of the issues in contention in the appeal.

Thus, in *Gassy v The Queen*⁹, a jury in Adelaide in the first trial found the accused guilty of the murder of a senior State medical officer. The accused protested his innocence. There was no DNA evidence linking Jean Gassy to the crime scene. There was no CCTV or other reliable film proving that he was in the vicinity of, or even the city of, the crime. His ordinary residence was in New South Wales. However, the prosecution set out to prove his guilt by attempting to piece together a mosaic of testimony, similar to that collected in the Stephen Bradley case, designed to show that Mr. Gassy had travelled to Adelaide to effect the homicide for which an arguable motive was shown.

The prosecution evidence included minute testimony as to the use of the accused's telephone in Sydney at the relevant times; the use and non use of his computer; the deposit and contents of a white bag linked to the accused in a garbage bin at a service station between Adelaide and Sydney shown indistinctly on CCTV and tracked to a local rubbish tip; evidence of ballistic experts; handwriting evidence; and other testimony seeking to prove a circumstantial case against the accused.

⁹ (2008) 236 CLR 293. The earlier decision of the Court of Criminal Appeal in South Australia is reported: *R v Gassy [No 3]* (2005) 93 SASR 454.

In the end, the issue presented for the High Court's decision related not so much to this evidentiary case but to directions given to the accused's jury by the trial judge. This feature of the case shows that, even if a substantial case can be built, based on forensic evidence, it does not necessarily conclude the question for trial or appellate courts. Other issues remain, including considerations of the fairness of the trial; the accuracy of judicial rulings on evidence and procedure; the correctness of directions given to the jury by the trial judge; and whether, overall, any miscarriage of justice has been established. These considerations inescapably invoke individual assessments by appellate judges. Whilst such assessments remain, it is commonly impossible to resolve all issues by reference only to forensic evidence tendered at the trial.

In May 2008, the High Court ordered a retrial of Mr. Gassy. This duly took place in April and May 2009. On 6 May 2009, he was again found guilty by the second jury and was convicted.

The Carr case: The limitation of forensic evidence was also demonstrated in the decision of the High Court in *Carr v Western Australia*¹⁰. That was a case in which technological evidence played a critical part in the trial. Mr Carr was accused of a serious bank robbery. He was brought to a police station to be interviewed. He was taken into the “interview room” where the formality of a police “interview” was begun. He put on the record of the interview (which was recorded on sound and videotape) his desire to first have legal advice. The police officer recorded that, as a result of the request, the “interview” was

¹⁰ (2007) 232 CLR 138.

“terminated”, by inference, in order to permit Mr Carr to secure legal advice.

Mr Carr was then led to another part of the police station where CCTV cameras were in position, able to record and film anything he did and said. The police immediately engaged him in conversation, opening the dialogue with pleasantries and banter. This led Mr Carr, who was something of a show-off, to join in the conversation with criminal *argot* and swear-words shared by the police officers. In the result, Mr Carr said things highly suggestive of his guilt of the offence charged. At his trial, Mr. Carr objected to the tender of the CCTV record on the basis that it was not an "interview" of the kind for which the Western Australian legislation (following the pattern of the ALRC report of 1975) provided.

The High Court Justices differed on the admissibility of the evidence. Against the text and history of the legislation, its purpose and the feature of formality that I took to be involved in a statutory requirement for an "interview", I concluded that the evidence should have been excluded from the trial. The majority held otherwise. I held that the requirement of an “interview” connoted a degree of formality in interrogation which was missing in the case.

My purpose now is not to re-argue the ruling of the majority which states the applicable Australian law. It is to indicate that the availability of evidence from technology (here the video and sound recording) is not of itself conclusive of all issues in a criminal trial. There may remain other and different issues, including those that go to the legal admissibility and the fairness of the evidence concerned. Those issues

will always require separate and careful determination by judges, according to law. Nevertheless, the availability of technological support can certainly help to enhance the safety as well as the fairness of convictions and reduce the chances of substantial miscarriages of justice.

INNOCENCE PROJECTS AND DNA EVIDENCE

US Innocence Projects: Miscarriages of justice have occurred in the United States where so-called "innocence projects", established in several Law Schools, have led to the re-examination of real evidence, maintained in old prosecution files. The subjection of that evidence to DNA profiling has sometimes produced outcomes casting serious doubt on the guilt of the accused or actually exonerating a serving prisoner. Because, in many States of the United States, the death penalty still operates, such innocence projects have assumed particular importance. In one State (Illinois), the number and variety of the cases involving exculpatory DNA evidence resulted in a decision by the State Governor to suspend further imposition of the death penalty because of a series of demonstrated wrongful convictions of prisoners on death row.

The Button case: Although, in Australia, we have long since abolished the death penalty, wrongful convictions have occasionally been proved by reference to DNA evidence.

The first such case of DNA exoneration arose in Queensland in 1999 following an alleged rape of a thirteen year old girl in an indigenous community. Initially, the complainant denied that she knew her rapist. She provided a description of her assailant to the police. Subsequently,

she changed her original statement. She nominated Mr Frank Button as the rapist. DNA evidence was not offered in the trial. Frank Button was found guilty and convicted. He always protested his innocence.

Soon after the crime was reported, a rape kit had been prepared and vaginal swabs obtained from the victim. These revealed the presence of spermatozoa. Still, the swabs apparently failed to yield a conclusive DNA profile that could establish the guilt or innocence of Mr Button. Notwithstanding his protestations, Mr Button began to serve his sentence. Later, sheet and pillow cases from the victim's bed were sent to the laboratory at the John Tonge Centre for analysis. However, they were not tested at all. Mr Button entered upon his seven year sentence of imprisonment.

Promptly, Mr Button lodged an appeal against his conviction to the Queensland Court of Appeal. His grounds raised the absence of scientific evidence in the prosecution case. Only then did the government laboratory submit the bedding from the victim's room to proper laboratory testing. A semen stain was indeed discovered on the complainant's bed sheet. It yielded a DNA profile. That profile did not match that of Mr Button. Concerned by that result, the laboratory tested the vaginal swabs again. This time, the laboratory elicited a male DNA profile. Once again, this did not match that of Mr Button. In fact, it was the same DNA profile as found on the complainant's bedsheets. It was run through a Queensland Convicted Offender Data Base. It matched the DNA profile of another person - a convicted rapist. He met the victim's *original* description of the offender as Mr. Button did not. That prisoner had lived in the same community as the complainant did.

The Court of Appeal of Queensland described the *Button* case as a "black day in the history of criminal justice administration in Australia"¹¹. Mr Button's conviction was quashed and he was released after serving ten months in prison where, he claimed, he was bashed and sexually assaulted. Unfortunately, that is often the fate in Australian prisons of those who are imprisoned for sexual offences against young persons.

The Farah Jama Case: An equally disturbing case involving forensic evidence later arose in Victoria. A 22 year old Somali migrant was arrested and charged with the rape of a 48 year old woman, known as M. She had gone to a singles night club in a Melbourne suburb where the effects of earlier prescription medicine and later drinking in her sister-in-law's car resulted in her collapse in the club's toilet cubicle. She was a big woman and very difficult to move. She could not at first account for being found unconscious; but she later expressed concern that she had been drugged and raped.

M could not identify any assailant, least of all the 19 year old Somali student who fell under police suspicion. This suspicion was raised because of a DNA sample that matched that of the student. That sample had been extracted a week earlier in the identical room of a Melbourne hospital where M had been taken by police. No-one at the night club (least of all M) could recall, or identify, a black youth attending the night club catering for mature-aged clientele where such a person would have certainly stood out. But these problems were swept

¹¹ *R v Button* [2001] QCA 133 at [20] per Williams JA. See also K Edwards, "Ten Things About DNA Contamination That Lawyers Should Know" (2005) 29 *Criminal Law Journal* 71 at 72-73; P Mugliston, "DNA admissibility and appeals" [March/April 2008], *Precedent* #85, 40.

aside because of the DNA evidence, linked to the uncertain M. The Somali student, Farah Jama, was arrested, charged, tried and convicted of rape. He began serving his sentence.

It was only when, 16 months later, the Victorian Court of Appeal, examined the DNA evidence scrupulously, that the possibility of contamination of the evidence was raised. Until that time, everyone had been blinded by the DNA evidence. No-one hit upon the possibility that it was identical because it was a contaminated sample, affected by the DNA extracted from the accused for another purpose a week earlier. An enquiry conducted by the former Court of Appeal judge, the Hon. Frank Vincent QC, concluded not only that a wrongful miscarriage of justice had occurred; and that Farah Jama had been wrongly convicted. It also concluded that almost certainly no rape had ever taken place at all¹².

The police and prosecuting authorities had not bothered to assign sufficient, or any, weight to the complete lack of objective evidence to support an inference of rape, save for a vague suspicion on the part of a woman who had collapsed in circumstances that could otherwise be explained. Sadly, it is possible that the accused's race and appearance were allowed to make up the deficiencies in the evidence that should have sparked a more thorough-going investigation. At the trial, the prosecutor told the jury were told not to be concerned about the absence of other evidence in the case because the DNA evidence was

¹² Victoria, *Inquiry into the Circumstances that Led to the Conviction of Mr. Farah Abdulkadir Jama*, 6 May 2010. (The Hon. Frank Vincent QC). See also Jason Gregory, "Taking on Faith Value", *Law Institute Journal* (Vic), September 2010, 24.

“rock solid” and established the accused’s guilt “safely and beyond reasonable doubt”¹³.

When the Vincent report was published, it caused an outcry and a demand by Mr. Farah Jama for monetary compensation. It also led to a series of proposals to improve the practices of the Victorian Institute of Forensic Medicine, so that these would reach national and international standards:

- * Sealed sexual assault examination kits are to be provided with strict requirements to govern DNA collection, transportation, analysis and storage procedures of the police;
- * Any concerns of forensic experts about the meaning and possible contamination of the evidence are henceforth to be notified to defence counsel;
- * Police training in DNA collection, transportation, analysis and storage is to be improved together with attention to the limitations of DNA evidence, especially where it is the most significant, or only, evidence against an accused;
- * Practising lawyers are to be trained by their professional bodies in the use and misuse of DNA;
- * The Victorian Director of Public Prosecutions has instructed that in all cases depending solely on DNA evidence, the matter is to be referred to him for consideration and personal approval of the prosecutor.

The Benjamin Forbes Case: In 2007, in Canberra, Mr. Benjamin Forbes was found guilty of sexually assaulting a woman at knifepoint.

¹³ The story is told in Milanda Rout, “How the ‘CSI Effect’ Sent an Innocent Man to Prison”, *The Australian*, 14 May 2010, 30.

He was convicted but protested his innocence. He appealed against his conviction to the Court of Appeal of the Australian Capital Territory, arguing that excessive reliance had been placed on DNA evidence taken from the victim's clothes which was said to strongly match the DNA of Mr. Forbes. An application for special leave to appeal to the High Court was refused. Chief Justice Robert French declared that it was open to the jury to convict Mr. Forbes on the evidence before them. In the light of concessions made by the accused's counsel in the courts below, the case was said not to be a suitable one in which to invite scrutiny by the High Court concerning the general reliability of DNA evidence; its admissibility in circumstances where it was the main or only evidence against an accused; and the directions to be given to a jury in such a case to avoid risks of a miscarriage of justice¹⁴.

Although the *Forbes* case was held not to be one suitable for consideration by the High Court, before long, it must be expected that a suitable case will be presented. In the United States of America, the National Academy of Sciences has identified several grounds of error that can easily arise in criminal trials because of excessive or ill-considered reliance upon DNA testimony¹⁵. The National Academy's report represents a scathing review of the practices involving the use of DNA testimony in criminal prosecutions in the United States. The review found grave failures in both police and prosecution practices; occasional instances of false evidence given by forensic experts; cases of dishonest evidence of informants; incompetent conduct of the accused's defence; and failure to comply with strict requirements for the

¹⁴ ABC News: High Court Dismisses DNA Challenge, 18 May 2010.

¹⁵ United States, Research Council of the National Academies, *Strengthening Forensic Sciences in the United States. A Path Forward*, report of the Committee on Identifying the Needs of the Forensic Science Community, National Academies Press, Washington, 2009.

conduct of DNA tests and the security and proper transport and analysis of samples later used as damning evidence against the accused.

The most scathing criticism of the National Academy in the United States is reserved for the judiciary, particularly in appeals, for failing to detect and rectify the imperfections and inadequacies of DNA evidence. The report talks of “judicial incompetence” and basic judicial misunderstanding of statistical and scientific evidence. It makes detailed proposals for improvements in the conduct of DNA testing; for assuring the independence essential to forensic science laboratories if they are to have integrity; and calls for greater judicial vigilance, including by reference to non-DNA evidence, so that decision-makers (whether judges or jurors) will not be “blinded” by unreasoning bias in favour of the accuracy and relevance of DNA testimony.

The pressures that are imposed upon appellate judges in Australia are as great as those that exist in the United States. It cannot be assumed that the opinions expressed in the United States by the National Academy of Sciences have no relevance to the Australian scene for the perils of error are likely to be exactly the same. Any one in doubt needs to read the Vincent report on the *Farah Jama* case.

LESSONS FOR FORENSIC EVIDENCE

Looking at the *Button* case, the *Mallard* case, the *Farah Jama* case and other instances of demonstrated wrongful convictions, some observers will say: at least the Australian judicial system got it right in the end. No system of criminal justice is perfect. Ours is better than most. Ours remains committed to avoiding miscarriages of justice. Some failings

are inevitable in any human system. Forensic evidence will reduce such cases in the future. Forensic evidence will help to reveal the innocent and also to confirm the guilty.

There is some truth in such statements. However, it remains necessary to reinforce a commitment to excellence, first-class science, accuracy and transparency as we progress along the path of involving increasing forensic evidence (especially DNA evidence) “in the search for the truth and the goal of convicting the guilty and acquitting the innocent”¹⁶.

There are a number of characteristics of forensic (including DNA) evidence that require particular attention. Without pretending to an exhaustive list, I would include the following:

1. *Avoiding human error*: Forensic evidence is only as good as the source materials that are subjected to analysis. As the *Farah Jama* case shows, if mistakes or inadequacies occur in the collection, handling and retention of such materials, they may find their way into, and influence, the trial. This danger is also demonstrated by the course of events described by the Court of Appeal of Queensland in the *Button* case. An original test was performed imperfectly. It was not followed up and immediately checked. Appropriate procedures to subject the initial results to confirmatory examination were not in place. It is essential for laboratories, and other organisations charged with performing forensic analysis according to scientific standards, to have regular proficiency tests. It is desirable that error rates for laboratory

¹⁶ *New York v Wesley* 533 NYS 2d 643 at 644 (Sct. 1988).

testing in Australia be measured and revealed¹⁷. Contamination is a clear problem in the collection and analysis of body and other samples. It may be accepted that, in Australia, contamination would rarely be occasioned by scientists and technicians with a deliberate purpose of convicting the wrong person. Yet contamination can follow from imperfect systems of collection, analysis, checking and retention of evidence¹⁸. To establish appropriate Australian standards in this regard is a necessary project of the national institutes engaged in forensic testing, and in particular in relation to DNA samples. The specification of such standards necessitates the input of people of different disciplines having a true commitment to scientific independence and excellence in forensic evidence presented to the police, prosecution authorities and the courts;

2. *Avoiding fraudulent error.* Whilst deliberate error may be a relatively minor problem in Australia, there is always a risk that contamination of evidence will be procured through improper or fraudulent intervention. Thus, the deposit at a crime scene of evidence (say a cigarette butt containing the DNA of a suspect) would completely undermine the integrity and reliability of all of the tests subsequently performed on that sample. In criminal argot, this is sometimes described as "the giving of presents". It may not now often happen in Australia. But police and other agencies must introduce rigorous and independently documented procedures to assure against it. These will include the immediate

¹⁷ Edwards, *op cit* n 12, 10. See also at 77; cf L Weathered, "A question of innocence: Facilitating DNA-based exonerations in Australia" [2004] *Deakin Law Review* 13.

¹⁸ Ruth M. Morgan et al, "Quartz grain surface textures of soil and sediments from Canberra Australia: A forensic reconstruction tool" (2010) 42 *Australian Journal of Forensic Sciences* 169.

filming and photographic scrutiny of uncontaminated crime scenes so that evidence will later be available to prove or disprove the presence of samples from which incriminating DNA evidence is extracted.

Because of the demonstration of high levels of improbability that mistakes are made in proof of criminal involvement using the presence of DNA evidence, there may be a temptation in some cases to attempt to supplement evidence against a particular accused by the introduction into the evidence of implicating DNA or other forensic samples¹⁹. I am sure that, in many of the former cases of police "verbals" the officers concerned assuaged their consciences by a belief that the accused, convicted in this way, was probably guilty of the crime; and certainly guilty of other crimes. It is the nature of interrogation by committed officers of the Executive Government that a point will be reached where they truly believe the criminality of the accused. This is the Rubicon which, once passed, may lead to a temptation to bolster the prosecution case by the introduction of false but forensically very powerful ("clinching") testimony. It was a risk of this kind of commitment that led to the challenge in the High Court to the so-called "scenario" evidence by which police set out to solve a number of unsolved ("cold case") crimes²⁰. The gathering and retention of forensic evidence is as important as its accurate analysis because it is at those points that dangers of

¹⁹ Research suggests that "jurors are 33 times more likely to convict in cases when prosecutors introduced DNA evidence than in similar cases where no DNA evidence was introduced": P Mugliston, above n 10, 41.

²⁰ *Tofilau v The Queen* (2007) 231 CLR 396; *R v Grandinetti* [2005] 1 SCR 27; (2003) 178 CCC (3d) 449. See also *In re Application of Chief Commissioner of Victoria Police* (2004) 74 ALJR 881; (2004) 9 VR 275 and A Ashforth, "Should the Police be Allowed to use Deceptive Practices" (1998) 114 LQR 108.

contamination are specially significant. In a sense, the very power and weight of DNA evidence produces a temptation to manipulate it. It will be essential that independent institutes of forensic sciences in Australia provide advice to government on how that risk can be confronted and overcome;

3. *Maintaining rigour of analysis:* There is another risk in the very power of DNA evidence. This is that those who are involved in the technology of analysis may be disinclined to admit error and even, sometimes, tempted to deny or cover it up. In the Queensland case of *Button*, there was no such attempt. On the contrary, immediately the test of the semen on the bedclothes was undertaken, it led to follow up checks and an acknowledgment of negative matching. The Victorian case of *Farah Jama* might never have been uncovered except for the fact that the prisoner changed his lawyers and the new lawyers demanded that the DNA material should be re-tested and carefully traced in its production and security to the self-same hospital room where the prisoner had given a sample of blood a week earlier.

Those who work in laboratories will, perhaps naturally, be proud of their work and disinclined to accept the possibility of mistakes. Experience in the courts teaches us to recognise the risks of human error and to face up to them when they are established. According to one report, the actual forensic scientist who conducted the original testing in the *Button* case was "disgruntled" that the Queensland Court of Appeal had concluded that Mr Button was innocent "just because testing revealed that

semen found in the victim's vaginal swab did not belong to him". Apparently, this scientist argued that the Court should have considered the possibility that the complainant either had consensual sex before being raped by Mr Button or that he had been an accomplice in the rape²¹. A commentator on the case acidly observes that "presumably the Court did not ponder these possibilities because the victim gave evidence she was a virgin at the time and was attacked by only one man"²². The expert comments on the *Farah Jama* case are just as sharp. Professor Jeremy Gans of the University of Melbourne rightly declared: "It is a disaster, a debacle. It simply cannot get worse ...The criminal justice system has an incident where nothing happened and has harassed everyone involved"²³.

It is a not uncommon feature of human endeavour by highly trained personnel that they dislike seeing proof of their own errors. Yet, in any human activity, a total absence of risks of error is impossible. It will be important for the Australian institutes of forensic sciences to promote an outlook amongst all persons involved in the collection, analysis, reportage and storage of forensic evidence to be alert to the possibility of mistake and contamination; to attempt to guard against it; to be open to the demonstration of error; and to adopt transparent procedures that will guard against entrenching error. No other approach is consistent with the presumption of innocence; the criminal onus and standard of proof; and the avoidance of miscarriages of

²¹ Edwards, *op cit* n 10, 83 citing Queensland Crimes and Misconduct Commission, *Forensics Under the Microscope* (2002) at 5-6.

²² Edwards, *op cit* n 10, 83 citing "7:30 Report on the Button case".

²³ Quoted *The Australian*, 14 May 2010, p30.

justice in criminal trials made the more difficult to reverse because of the near impossibility of getting rational people to think that scientific (especially DNA) evidence may be inaccurate, inadequate or contaminated.

The introduction of stricter standards imports an inescapable cost in the performance of forensic science analysis. Rigour and transparency are costly²⁴. Governments that embrace the use of forensic evidence must be prepared to face the obligation to expend the funds necessary to avoid the debilitating subsequent proof of mistakes. Such mistakes have a tendency to undermine the credibility of forensic evidence. They weaken its acceptance in the judiciary, the legal profession and the general community. Excellence, in forensic evidence or anything else, is bought at a cost that the Australian community must be prepared to pay²⁵.

As a further attribute of rigour it will be essential to distinguish scientific evidence that is causally related to crimes from that which is no more than coincidental or little more than a gimmick. The *New Scientist* recently claimed that "whether a teenage criminal turns into a violent adult or grows out of it may be related to how his ears are set or the food he ate as a child"²⁶. This report suggested that criminality can be "written into [the] genetic code and made worse by bad parenting". There would be large dangers in the widespread use of data of this kind ("minor physical anomalies such as low seated ears or furrowed

²⁴ Mugliston, above n 10, 41.

²⁵ E Murphy, "The New Forensics: Criminal Justice, False Certainty and the Second Generation of Scientific Evidence" (2007) *California Law Review* 721 at 722.

²⁶ K John, "Cracking criminal gene code", *Daily Telegraph*, (Sydney), 11 April 2008, 24.

tongues") because such data is unlikely to be predictive. Certainly, it would be likely to be over-inclusive. Forensic evidence worthy of the name must separate good science from infotainment.

4. *Upholding supervisory regulation:* Another lesson in this field, as in others, is the importance of ensuring the quality of forensic evidence by providing effective supervisory bodies that regularly check systems and the evidence in individual cases²⁷. Independent centres for forensic evidence can make a significant contribution to the reliability and security of forensic evidence by formulating proper principles of supervision and ensuring that supervisory bodies are constituted with cross-disciplinary expertise and possibly community participation so as to reflect broad community values. In the nature of evidence dependent upon expensive technologies, available in a limited number of laboratories, the government and its agencies will have the inside running in the analysis and presentation of much forensic evidence. This makes it all the more important that supervisory bodies should be created to afford assessments that are critical and include discordant voices that subject the official procedures and outcomes to close, regular and, where necessary, searching scrutiny²⁸; and
5. *Securing transparency:* In addition to all of the foregoing, a general principle of transparency is crucial for the success of the

²⁷ The arrangements for consent or other lawful authority for procuring DNA samples from a suspect are also important: J Gans, "Much repented: Consent to DNA sampling" (2007) 30 UNSWLJ 579.

²⁸ See Murphy, *op cit* n 19, at 774-775.

use of forensic evidence over the long term. The *Mallard* case demonstrates how important it is that prosecution evidence that might bear on the probable innocence of the accused's representatives should be made available to the accused, especially if a prosecutor does not intend to tender that evidence at the trial. The decisions of the High Court in the *Mallard* case, and in other cases, collect developments in this field of the law in countries other than Australia. It is important to note that in many overseas jurisdictions, the principle of equality of arms²⁹ between the prosecution and defence has been generally embraced. The prosecution must act as a model litigant. It must be honest and transparent in its provision of relevant evidence so that such evidence may be subjected to appropriate examination by the accused and, if so decided, presentation to the curial decision-maker.

The foregoing by no means represents a complete list of the standards and principles that need to be adopted to ensure the reliability and accuracy of forensic evidence in Australia. In the future, technological evidence will make an important contribution to bringing to justice those who can be proved, to an extremely high level of assurance, to be the perpetrators of criminal and other wrong-doing. As the *Button* case shows, forensic evidence will sometimes have an important role in exculpating the innocent. It will take national leadership in Australia to ensure that the relevant disciplines and expertise are brought together and presented to the official users and the community generally with

²⁹ *Mallard* (2005) 224 CLR 125 at 150-157 [64]-[88]. The passage cites *Lawless v The Queen* (1979) 142 CLR 659; *R v Apostilides* (1984) 154 CLR 563 at 575; *Grey v The Queen* (2001) 75 ALJR 1708 at 1712 [16] and decisions of courts in North America, Britain and Ireland and in international tribunals.

the applicable standards and principles and the ways by which those standards and principles may be attained, maintained and repeatedly demonstrated.

The Attorneys-General of the Commonwealth and of the States and Territories have established a working party to consider national standards for the use and collection of DNA evidence in the light of the problems demonstrated in such cases as *Button* and *Farah Jama*³⁰. A proposal has been drawn up by scientists working with the National Institute of Forensic Science, a division of the Australian and New Zealand Policing Advisory Agency. It will be important that the Institute should have, and retain, a high measure of independence from police, prosecution and governmental power and influence. Only then will we in Australia avoid the problems drawn to attention in the United States by the National Academy of Sciences. Only then will we avoid the repetition of the serious injustices demonstrated in the *Mallard*, *Button* and *Farah Jama* cases.

Unattended and unrepaired, such injustices will be bound to cast doubt on modern forensic evidence. Properly safeguarded, that evidence will be a vital weapon in the endeavour of our society to secure the conviction of those guilty of crimes and to ensure the acquittal of those who cannot be proved guilty by admissible and reliable evidence.

³⁰ See C. Merritt, 'National DNA review has all the evidence of a good idea' *The Australian*, 16 April 2010, 20.