



JUDGMENT

Lundy (Appellant) v The Queen (Respondent)

From the Court of Appeal of New Zealand

before

**Lord Hope
Dame Sian Elias
Lord Kerr
Lord Reed
Lord Hughes**

**JUDGMENT DELIVERED BY
Lord Kerr
ON**

7 October 2013

Heard on 17, 18 and 19 June 2013

Appellant

David Hislop QC
Malcolm Birdling

(Instructed by Alan Taylor
and Co)

Respondent

Cameron Mander
Annabel Markham
Matthew Davie

(Instructed by the Crown
Law Office)

LORD KERR:

1. At about 9am on the morning of Wednesday 30 August 2000, the bodies of Christine and Amber Lundy were discovered in their home at 30 Karamea Crescent, Palmerston North, New Zealand. Christine Lundy was the wife of the appellant, Mark Lundy, and Amber was their seven year old daughter. Christine and Amber had been brutally murdered. The dreadful wounds that they had suffered were such as might have been inflicted by an axe or a hatchet but no murder weapon was ever found.

2. The appellant was charged with the murder of his wife and daughter and tried before Ellis J and a jury at Palmerston North High Court in 2002. He was convicted of both murders and sentenced to life imprisonment and ordered to serve a minimum term of 17 years. An appeal against his conviction was dismissed by the Court of Appeal on 13 August 2002. At the same time the court allowed an appeal by the Solicitor General against sentence and the minimum term was increased to 20 years.

3. It appears that, after the Court of Appeal had delivered its judgment, Mark Lundy informed his legal advisers that he wished to appeal to this Board. Difficulties in funding an appeal, the lack of legal aid and problems associated with persuading counsel to act pro bono combined to prevent an application for permission to appeal being made until November 2012. Permission was sought on seven grounds. These included a challenge to the Crown's expert evidence given at the trial. That challenge was based on fresh evidence which the appellant sought to have received on the appeal.

4. Questions arose as to whether the Privy Council had jurisdiction to entertain the appellant's application for permission to appeal and, if so, whether it should have resort to that jurisdiction. These were dealt with as preliminary issues by the panel considering whether permission should be given.

Jurisdiction

5. The Privy Council's jurisdiction in respect of New Zealand criminal appeals originated in the Royal Prerogative. It was affirmed and regulated by the Judicial Committee Acts 1833 and 1844 (which apply to New Zealand by virtue of section 3 of the Imperial Laws Application Act 1988 (NZ) and section 52 of the Supreme Court Act 2003 (NZ)). Section 42 of the 2003 Act abolished the right to appeal to the Privy Council "from or in respect of any ... criminal decision of a New Zealand court made after 31 December 2003...". Section 49 provided that, as from 1 January 2004, the

Imperial enactments under which appeals from New Zealand courts to the Privy Council had been brought should “cease to have effect as part of the law of New Zealand”. Section 52(1)(b) of that Act provided that applications to the Privy Council for leave to appeal against a decision of a New Zealand court made before 1 January 2004 “must be determined as if sections 42 and 49 had not been enacted”.

6. With the establishment of the Supreme Court of New Zealand, transitional provisions to deal with appeals from decisions of the Court of Appeal of that country made before 1 January 2004 were required. The jurisdiction of the Board to entertain appeals from such decisions is specifically preserved by sections 52(1)(b)(i) and section 50(1)(c)(i) of the Supreme Court Act 2003 (NZ).

7. The proposed respondent contended that the issues raised in the application for permission to appeal would be best resolved by way of an application for the exercise of the Royal Prerogative of Mercy (RPM) or the Governor-General’s power to refer convictions to the New Zealand Court of Appeal under section 406 of the Crimes Act 1961 (NZ). Decisions made in that process are amenable to judicial review on procedural grounds and a dismissal of the appeal by the New Zealand Court of Appeal is justiciable by the Supreme Court of New Zealand. The appellant argued that the existence of RPM was irrelevant to the question of jurisdiction. Even if relevant, however, it was not an effective alternative to a criminal appeal. It was a remedy of last resort and was unsuited to consideration of fresh evidence issues.

8. The existence of the power to refer convictions to the Court of Appeal does not negate the jurisdiction of the Privy Council to entertain appeals from decisions of the New Zealand Court of Appeal made before 1 January 2004 but they are relevant to how the Board should exercise the jurisdiction preserved by the 2003 Act – see *Barlow v R* [2009] UKPC 30, para 9.

9. The respondent accepted that the Board had jurisdiction to consider fresh evidence where the decision of the intermediate court of appeal was on a ground other than the effect of the fresh evidence. In *Barlow* an exception to that general principle was recognised but in that case the evidence was plainly fresh in that it arose after the trial and was incontestable. In the present case, the respondent argued, the evidence was not, in any real sense, fresh. It was accepted that the overriding test in relation to the admission of evidence was whether it was in the interests of justice that it should be admitted but since no justiciable issue as to the reasons or judgment of the New Zealand Court of Appeal was raised by the application for permission to appeal, it was not in the interests of justice to give permission in this case.

10. An appeal to the New Zealand Supreme Court was possible by agreement of the parties. The effect of sections 50(2)(b) and 51(2)(d) of the 2003 Act is that the

parties may agree, in a case involving a decision made before 1 January 2004, that any appeal should be made to the Supreme Court of New Zealand. It was not suggested by the respondent, however, that this course should be followed. On the contrary, as pointed out in para 7 above, the respondent's attitude was that an appeal was inappropriate and that the issues raised should be dealt with by an application for the exercise of RPM.

11. It was clear to the Board from a consideration of the issues raised in the application for permission to appeal that careful evaluation of the 'new' evidence which the appellant wished to introduce would be required. This would be necessary to decide whether the evidence should properly be admitted and, if so, what effect this might have on the question of whether a miscarriage of justice had occurred. The Board was also conscious that an application for RPM or reference to the Court of Appeal by the Governor-General would, of necessity, entail a significant delay and that an application for permission to appeal to the Board might well transpire after an unsuccessful application for RPM or the failure of an appeal following a reference to the Court of Appeal. Inevitably, an order for a retrial was a possible outcome of an appeal. A considerable period of time has already elapsed since the original trial. Taking all these factors into account, the Board concluded that permission to appeal should be granted. It should be emphasised that this is a decision which reflects the particular circumstances of the present case. It does not represent a statement of principle as to how applications for permission in cases involving appeals from decisions of the New Zealand Court of Appeal before 1 January 2004 should be dealt with.

The facts – a short outline

12. The bodies of Christine and Amber Lundy were found in the bedroom of the house where Mr and Mrs Lundy customarily slept. Christine Lundy was lying on her back, on her usual side of the marital bed. She was naked but her lower body was covered by bedclothes. Amber Lundy's body was found in the doorway of her parents' bedroom. She was wearing a night dress. She was lying face down on the carpet and the angle of her body suggested that she had been leaving the room when she was killed. There was no sign that they had been sexually assaulted.

13. Mrs Lundy wore spectacles. Indeed, she depended heavily on these to improve her vision. Her spectacles were found in a case which rested on a bedside cabinet. The television was on standby mode and the remote control for this was found on the bed next to Mrs Lundy's body.

14. A window in the conservatory at the rear of the house showed signs of having been forced. One of the catches had been broken. The sliding door beside the

window had been left open. At Mr Lundy's trial, the Crown claimed that the signs of forced entry suggested that it had been staged. This claim will be examined later in the judgment. There was no evidence that the house had been ransacked. Indeed, the only item of property found to be missing was Mrs Lundy's jewellery box. This box has never been recovered but a bracelet was subsequently found in the appellant's car which may have come from the jewellery box. This shall be referred to in more detail later.

15. Mr and Mrs Lundy were engaged in the business of selling sinks and associated kitchenware. They ran this business from their home. The nature of the business was such that, on occasions, Mr Lundy had to be away from home on sales trips. He was on such a trip to Wellington on Tuesday 29 August 2000. On this occasion he stayed in a motel which he had used a number of times before, the Foreshore Motor Lodge. This motel is in Petone, which is about 8 kilometres north of Wellington. Wellington is some 145 kms south of Palmerston North.

16. Telephone records produced at the appellant's trial established that at 5.30pm a call from Mrs Lundy's telephone had been made to the appellant's cell phone. This call lasted eight minutes and it was established that, at the time he received the call, the appellant was in the Petone area. After that call, Mrs Lundy and Amber went to a local restaurant and bought a takeaway meal at 5.43pm. At 6.56pm Mrs Lundy received a call from a friend. In the course of a brief conversation, she said that her husband, the appellant, was out.

17. Telephone records showed that at 8.28pm on 29 August, Mark Lundy used his cell phone in the Petone area to make a telephone call. The Crown case at the trial was that the appellant had murdered his wife and child some time around 7pm on 29 August. Since he had been in the Petone area at 5.30pm (the time that the telephone call from his wife's phone began) and was there again at 8.28pm, for the prosecution case to be right, Mr Lundy would have had to complete the round trip from Petone to Palmerston North and back and to have carried out the murders in the space of two hours and fifty eight minutes. (The cell phone evidence was to the effect that the location of the telephone receiving the call was established at the *start* of the call not when it ended.) Later in the evening some time after 11pm a prostitute visited Mr Lundy in his motel room and remained there for approximately one hour.

18. It is therefore not surprising that two aspects of the evidence on which the Crown relied occupied a prominent position during his trial. The first was that central nervous system (CNS) tissue from Christine Lundy was found on a polo shirt which belonged to Mark Lundy and which had been taken by police from his car on 3 September 2000. The second was that post mortem examination of the bodies of Christine and Amber Lundy suggested that their deaths were likely to have occurred between 7 and 7.15pm on 29 August. Of these two pieces of evidence, the obviously

more important was that in relation to the CNS tissue and it is this which will call for closest examination in this judgment.

19. In Mr and Mrs Lundy's home there was a personal computer and a laptop. The computer was examined and it was found that it had apparently been turned off at 10.52pm on 29 August. If it had been switched off by Mrs Lundy at that time, this would be plainly at odds with the Crown case. The prosecution engaged a computer expert, Maarten Jozef Kleintjes, to examine the computer. He advised that it was possible to manipulate it so as to give the appearance of the computer having been shut down at a different time from when it had actually been closed. He also discovered that registry back-up files on the computer were out of sequence which suggested that someone had been "playing around" with the computer settings.

The CNS tissue evidence – before and at trial

20. The injuries inflicted on Mrs Lundy caused loss of brain tissue; the autopsy of her body revealed that portions of her brain were missing. The forensic scientist who examined the scene of the murders, Mr Bjorn Sutherland, saw what appeared to be brain tissue on items on the bedside cabinet and on the floor beside the cabinet. Staining caused by lumps of tissue was observed at points up to 1.5m from the floor. A small lump of tissue was seen to be adhering to the ceiling. It is entirely feasible, therefore, that brain tissue had been expelled from Mrs Lundy's body during the attack upon her and could have been deposited on the clothing of her attacker.

21. The appellant was intercepted by police on his way back to Palmerston North on 30 August 2000. He had been returning there in his car at some speed, having been informed by a friend in a telephone conversation that police were at his house. After the police stopped him they placed Mr Lundy in a police vehicle for his own welfare and his car was towed away to secure storage. On 3 September the car was searched and one of the items found was a striped polo shirt. Asked about this shirt in interview, the appellant said that he had packed it in his luggage to take to Wellington and that he had worn it on the evening of 29 August.

22. Although the shirt was placed in a forensic bag on 3 September 2000, it was not examined until 27 October, 59 days after the murder. Mr Sutherland noted two areas of staining on it. The first of these was on the front left sleeve and the second on the chest pocket. The first area of staining was in the form of a whitish/brown smear. Its dimensions were 30mm x 20mm. The second stain measured 25mm x 10mm approximately. A 'dab' slide was taken from the first stain by rubbing a moistened slide against it. Both areas of staining were cut out and sent to the forensic science laboratory at Auckland for testing. Biological material in both stains was found to contain DNA material. Mrs Lundy was the source of the DNA. Several small red

particles taken from tape lifts from the polo shirt were considered to be blood, although it could not be positively identified as such. Three of these particles were tested and found to have DNA from Amber..

23. The slide which Mr Sutherland had made from the first area of staining (referred to throughout the proceedings as the 'ESR slide') was examined by a number of local pathologists, including Dr James Pang and Dr Cynric Temple-Camp. Both conducted microscopic examination of the slide. Dr Pang gave evidence that cells were present on the slide and that these were consistent with the supportive cells in the brain known as glial cells. Dr Temple-Camp also found glial cells on microscopic examination of the ESR slide. Filaments extending from the cells (which would be further indication of their source as the brain or the spinal cord) could not be detected, but Dr Pang considered that for "day-to-day practice" purposes, they could be identified as glial cells emanating from the brain or spinal cord. Because of the potential significance of the evidence, however, it was considered that immunohistochemical (IHC) testing should be undertaken.

24. It was decided to refer the ESR slide to Dr Rodney Miller, the director of immunochemistry at ProPath laboratory in Dallas, Texas. Initially, this was considered necessary because he employed a special technique which enabled the transfer of cellular material from one slide to another. It was believed that the ESR slide was the only possible source of the cellular material and it was considered that there was a risk that this might be lost. The local pathologists wanted to ensure that sufficient material from the ESR slide could be transferred for such further analysis as Dr Miller might undertake.

25. In the event, transfer from the ESR slide was not considered to be necessary. Dr Miller said that he was able to take new slides directly from the stains on the appellant's shirt. The investigating police officer, Detective Sergeant Ross Grantham, had travelled to Texas with the appellant's polo shirt on 4 February 2001. He and Dr Miller went to the ProPath laboratory the following day where the shirt was photographed and two strips containing the areas of staining were removed from the shirt and put into a tissue processing cassette. This was then placed in formalin fixative and processed in what Dr Miller described as "a standard tissue processor in an identical fashion to the manner in which patient biopsies or other patient tissue samples are processed". This process provided small blocks of wax, known as paraffin blocks, in which the strips of Mr Lundy's shirt were embedded.

26. On 6 February 2001, thin slices were cut from the surface of the paraffin blocks. These were mounted on glass slides and the slides were stained with two dyes, hematoxylin and eosin (H&E). Dr Miller examined these H&E slides under a microscope. Their appearance was suggestive of CNS tissue. ProPath's standard IHC techniques were then employed. Various stains were applied including four stains

expected to be positive in CNS tissue, and three stains expected to be negative in CNS tissue. The slides also had mounted on them a large number of control samples. According to Dr Miller, the slides containing the stained fabric from the appellant's shirt reacted as CNS tissue would be expected to for all seven stains used. The control samples similarly behaved as expected. Dr Miller testified at trial that these results provided conclusive evidence that they contained CNS tissue.

27. Two experts were engaged for the defence to deal with the nature of the substance found on the appellant's polo shirt. They were Dr Beth Synek and Professor Peter Vanezis. Dr Synek is a neuropathologist. She is not an expert in IHC. When she supplied her report to the appellant's lawyers she did not know that the sample from the appellant's polo shirt had been taken 59 days after the murders. Indeed, she had been asked by Mr Behrens QC, Mr Lundy's counsel at the trial, whether brain tissue would be recognisable pathologically if found on a shirt about 30 hours after removal from the body. She conducted tests which showed that brain tissue could be recognised after some 30 hours exposure to air. Mr Behrens sent Dr Miller's report and photographs of his slides (but not the slides themselves) to Dr Synek. Having looked at these and consulted colleagues, Dr Synek considered that there was CNS tissue present on the slides. She informed Mr Behrens of her view. She agreed to give evidence at trial on the limited and essentially unrelated question of how the substance came to be transferred to the shirt. In the course of her evidence, however, she agreed with Dr Miller's conclusion that it was brain tissue and took no issue with his methodology.

28. Professor Vanezis was also asked to review and comment on the procedures adopted by Dr Miller and the conclusions that he had reached. Professor Vanezis is a pathologist but not a neuropathologist. Initially, he recommended that the tissue samples should be re-tested independently for the presence of brain tissue and offered to arrange for this to be carried out. Subsequently, however, he rather down played this question and suggested that "it looks fairly certain that we are dealing with brain tissue". He repeated that he had a specialist available who would deal with "the narrow issue of brain identification" while saying that he would concern himself with how the material got on to the shirt. Subsequent correspondence between trial counsel and the professor focused on the issue of contamination but on 11 October 2001 Mr Behrens emailed Professor Vanezis asking for the name of the professor of neuropathology who could consider the identification of the brain tissue. Professor Vanezis replied giving the name of Professor David Graham of the Neurosciences Institute at the Southern General Hospital in Glasgow. Unaccountably, Professor Graham did not view Dr Miller's slides and his view about the nature of the material retrieved from the polo shirt was not obtained. In his report for the trial Professor Vanezis stated that he had examined Dr Miller's report and looked at the slides and that there was no doubt that the material was brain matter. Professor Vanezis did not give evidence at trial.

29. In these circumstances it is perhaps not surprising that Mr Behrens conceded in the course of the trial that the material on the polo shirt was indeed CNS tissue. The defence case focused not on the nature of the material but on how it came to be on the shirt – whether this was the result of inadvertent contamination or whether it had been deliberately placed there. The concession was pivotal. Evidence that CNS tissue was found on the appellant’s shirt where his wife’s DNA was also present was of obvious and critical importance. The Court of Appeal in its judgment dismissing the appellant’s appeal against his conviction described the finding of Mrs Lundy’s brain tissue on the appellant’s shirt as “the most cogent piece of evidence” in support of the Crown’s case.

The time of death evidence – before and at the trial

30. The espousal by the prosecution of the case that the murders had been committed between 7 and 7.15pm on 29 August was central to their theory as to when the murders were committed. The case which the Crown presented at trial depended crucially on establishing that the deaths had occurred at that time. The learned trial judge, Ellis J, directing the jury on this question said this:

“Plainly for the prosecution to succeed, the time of death of around 7pm is essential. If you are not satisfied on the evidence of this, or are left in reasonable doubt about it, then it is fatal to the Crown Case.”

31. The prosecution called three witnesses on this issue. The first of these was Dr Pang. He was admitted to the scene of the murders with an assistant, Dr Katherine White, at about 5pm on 30 August. At that time he did not carry out an examination of the bodies designed to establish time of death. On the advice of forensic staff he did not take rectal temperatures of the deceased or assess the degree, if any, of rigor mortis, which might have given some indication of how long Mrs Lundy and Amber had been dead.

32. Dr Pang carried out the autopsies on both bodies, Amber’s beginning at 7.30pm on 31 August and that of Christine at 9am on 2 September. He found that both stomachs were “quite full” and he was able to identify the stomach contents as a meal such as would be purchased from the fast food restaurant from which Mrs Lundy and her daughter had obtained the takeaway the evening before. He and Dr White (who accompanied him during the autopsies) noted that there was no smell of gastric juices. This indicated to Dr Pang that the digestive process had not begun. He described the duodenum in both bodies as empty which he took to be a further indication that the digestive process had not started. On the basis of these factors he made what he described as an “estimate” or an “educated estimate” that the deaths had occurred

within an hour of Amber and her mother having eaten the meal. Dr White confirmed the absence of the smell of gastric juices.

33. The third witness for the prosecution on this issue was Professor Gilbert Barbezat, a gastroenterologist. He said that the absence of the smell of gastric juices was “very striking”. He accepted that absolute certainty was not possible but he provided a “reasonably confident estimate” that death had occurred within an hour of the food having been ingested. The pathological evidence, together with the absence of gastric smell, suggested that the stomach was not yet in the emptying phase. It was in what he described as the “lag” phase. The emptying phase, in the professor’s opinion, usually began within 15 to 45 minutes of the food having been eaten. While there were several factors that could alter that timing, Professor Barbezat considered that it was significant that the material findings were identical in both Amber and Christine’s cases. This reduced considerably the risk of error in estimating the time of death.

34. On 9 July 2001, Mr Behrens had engaged a pathologist, Dr Simon Stables, to advise on the time of death issue. On 12 July Dr Stables wrote to Mr Behrens. The following statements were contained in that letter:

“... the deduction of time of death from stomach contents can be extremely unreliable, in particular, if one is trying precisely state the time of death. Emptying of the stomach is dependant on numerous variables including medications, the amount of food, the caloric content of the food, and shock or stress amongst other factors. It is only after taking into consideration all these factors one might be able to give a 'rough' time frame in which death may have occurred. However I myself would not take this position. That being said, the examination of stomach contents does have one use, that is to determine what the last meal was.”

35. Dr Stables supplied Mr Behrens with an extract from Professor Bernard Knight’s work, “Forensic Pathology” 2nd edition which, among other things, stated that, but for certain extremely circumscribed exceptions, there was now “almost a consensus” that stomach emptying as a measure of time of death was “too uncertain to have much validity”. It is clear that Mr Behrens continued to consult Dr Stables throughout the trial. He also consulted Professor Vanezis on this topic. The professor described Dr Pang’s estimate of one hour as having no scientific basis and he was critical of the doctor for failing to take ambient and body temperatures at the scene or to record his views on rigor mortis and lividity of the bodies. Finally, in an email exchange with a firm called “jlegalmedicine” in January 2002 Mr Behrens received forthright advice which was sharply critical of Dr Pang’s claim that lack of gastric smell provided an indication of the time of death.

36. Mr Behrens deployed the evidence that he had obtained on this issue to some effect in his cross examination of Dr Pang. The witness accepted that it was possible that it would take 5 to 6 hours for a heavy meal to be emptied from the stomach; that estimating the time of death from stomach contents lay in the field of physiology and that he was not an expert in that field; and that he had never before given evidence about the significance of the absence of smell of gastric juices. When it was put to him that there was no support in medical literature for his theory about the significance of gastric smell in determining the time of death, he said that he thought that this appeared in the textbooks and that he should be able to locate references to it if he was given the opportunity. In the event, despite having had that opportunity, he was unable to produce any text which supported his theory.

37. Under cross examination Professor Barbezat agreed that smelling gastric juices was a subjective matter and that this might have been missed by Dr Pang and Dr White. He also agreed that the fat content of the consumed food slowed the emptying of the stomach. He considered that there might have been some mixing of gastric juices with the food and that small amounts of the meal might have emptied from the stomach without having been detected by Dr Pang.

The computer evidence – before and at trial

38. Mr Kleintjes was the chief technical investigator in the New Zealand police force when he gave evidence at Mr Lundy's trial. He visited the Lundys' home on 8 September 2000. He there found a Hewlett Packard computer. He cloned the computer, that is to say, he broke the warranty seal on the computer and then made a copy of the information contained on the hard drive. His subsequent examination was conducted on the cloned data.

39. In the course of his evidence-in-chief Mr Kleintjes demonstrated to the court how it was possible to change the time setting on the computer clock during operating and start-up modes. A change carried out while the computer was in operating mode left a time print on the hard drive. By contrast, a change effected while the computer is in start-up mode does not leave a record. Mr Kleintjes explained that registry or back-up files are integral to the operation of a computer. The principal purpose of these is to keep track of internal settings to enable start-up of the computer to function. If it is the practice of the owner of the computer to switch it off each day, a back-up file is created which records the settings for that particular day. Five days' back-up files are stored on this model of computer. When a sixth file is created, the oldest file (i.e. that which was created first of the extant back-up files) is automatically deleted from the computer and replaced by the most recent back-up file. If the computer is functioning normally, the files will be displayed in the sequence in which they were created. Thus, for any five day period, files will appear in date order. These registry

or back-up files are normally hidden from the user because in the ordinary course of events, there is no reason for the user to have access to them.

40. Mr Kleintjes gave evidence that when he inspected the registry files he found that they were “all out of order”. In his opinion, the explanation for the files being out of order was that the date and time on the computer had been changed backwards and forwards. In order for the files to be as out of sequence as he found them to be there had to be “extensive manipulation of the time and date”.

41. The last verifiable activity on the computer Mr Kleintjes found to be at 3.40pm on 29 August. This was recorded on the computer but was also checked against telephone logs made from the house to the internet service provider. It was therefore possible to state that at the time the computer had last been accessed (3.40pm) the computer clock was “very close to real time”. There was no evidence on the hard drive of the computer to suggest that the time had been changed between 3.40pm and the recorded shut down time of 10.52pm. But Mr Kleintjes demonstrated that, by using a floppy disk, it was possible to alter the time on the computer without leaving a trace on the hard drive. No record of the use of the floppy disk would be made on the computer and the use of this method to alter the time would have no effect on the sequence of the registry files.

42. The thrust of Mr Kleintjes direct evidence, therefore, was that it was possible to adjust the time record of the computer by using a floppy disk or in the course of start-up mode without leaving any trace on the hard drive. In his estimation the significance of the disordered sequence of the registry or back-up files was that it showed that someone had been experimenting or manipulating the date and time controls.

43. In the course of his police interviews the appellant had suggested that the time that his wife had gone to bed on the evening of 29 August could probably be deduced from the time at which the computer had been switched off because it had been her practice (and his) to turn off the computer just before going to bed “because we always check for emails at night”. Mr Kleintjes was asked to comment on this evidence. He observed that the shut down time of 10.52pm could not be relied on as the time at which it was actually closed down. He said, “Through manipulation of the computer clock, an impression can be created that a computer was shut down at any arbitrary time and date. All this without leaving a trace.” Finally, Mr Kleintjes explained that, after having created a fictitious shut-down time and having actually shut down the computer, it was possible to go into set-up mode and turn the clock back to real time.

44. The effect of Mr Kleintjes' evidence was to allow the Crown to make the case that Mr Lundy had practised manipulating the time and date on the computer before the murders and had left evidence of this in the disordered registry files. And that it was possible for him to have adjusted the time control on the computer to create the impression that it had been shut down at 10.52pm. Further that he could have restored the actual time by using the start-up mode and without leaving a trace of the earlier change to the clock and its reinstatement to real time. And that he had made the suggestion that he did in the course of his police interview in furtherance of this stratagem.

45. Under cross examination by Mr Behrens, Mr Kleintjes agreed that the disordering of the back-up files could only occur if dates on the computer (as opposed to merely times) had been changed. The witness was asked whether a virus could bring about disorder of the files and he replied that this was "a bit far-fetched" but that he supposed that someone could "write a virus that would do it". He had never seen disordering of files resulting as a side-effect of a virus, however. He said that such checks as he had carried out did not reveal that there had been a virus in the computer and that an anti-virus programme was installed in the computer. In reply to Mr Behrens, he said that the letters "KAK" meant nothing to him. He agreed that, if manipulation of the date on the computer had caused the disordering of the files, this might have occurred many months before 29 August. He accepted that, if the time on the computer had been altered, this would have had to occur after 3.40pm.

46. Mr Behrens had engaged a computer expert before the trial, Mr Alan Peacock, to advise on the computer evidence to be given by Mr Kleintjes. In his report Mr Peacock had stated that there was a computer virus (KAK) which could disrupt and disorder the registry files. The virus was found on the Lundy computer. Mr Peacock was of the view that to carry out the manipulation of the computer suggested by the prosecution would require a level of expertise beyond even some experts.

47. Mr Peacock was not called to give evidence. The reason for this is unclear. In response to a query by the Registry of the Judicial Committee of the Privy Council as to why the witness was not called, Judge Behrens (as he now is) said this:

"I cannot be certain about this. In the course of my cross-examination of Mr Kleintjes I was about to ask him a crucial question based on what Mr Peacock had told me. The answer should have been in support of the defence case. However I sought leave and got it, to approach Mr Peacock who was in the public gallery. I put the proposed question to him again and he was confident that the answer would be as he had previously said. It was not. I cannot recall now whether that was the genesis of the decision not to call him but I think so because he was

there listening to the evidence on the basis that he was to be an expert witness”

48. It may be that there was a different reason. Mr Peacock had stated in his report that for there to have been manipulation in the manner suggested by Mr Kleintjes, the appellant would have had to have accessed the “command.com” file within what is known as the root directory on the computer. Automatic access to that file in the Windows directory occurs when the computer is opened and there was evidence that this had occurred on 29 August. But, in Mr Peacock’s view, there was also evidence of it having been accessed manually in the root directory on 29 August. Theoretically, this might have strengthened the suggestion that manipulation of the time control had occurred on that day. Ironically, on the appellant’s case before the Board, it is said that Mr Peacock can be proved to have been wrong in his conclusion that access to the root directory was achieved manually because both command.coms in the Windows and the root directories are accessed automatically when the computer is switched on. This opinion will be considered in greater detail later in this judgment.

The proceedings

49. As mentioned earlier, at the trial, counsel for the appellant did not challenge the evidence identifying the stains on his shirt as his wife’s CNS tissue. The issue at trial on this piece of evidence was how the tissue got on the shirt and whether it had been wet or dry. The significance of the latter question will be discussed later. No expert evidence was called by the defence to refute the pathological evidence as to time of death.

50. The appeal against conviction in the New Zealand Court of Appeal was principally focused on the argument that it was wholly unlikely that the appellant could have completed the round trip between Petone and Palmerston North and have carried out the murders. The sole ground of appeal, therefore, was that the verdicts were unreasonable and not supported by the evidence.

The evidence obtained after the trial on the CNS tissue

51. On 26 January 2010 Philip Sheard, an associate professor in the department of physiology in the University of Otago, New Zealand, provided a report to the appellant’s current legal team. The report commented on the examination of microscope slides presented in evidence by Dr Miller on the trial of the appellant. Professor Sheard has used IHC as a principal research technique since 1990.

52. In his report, while acknowledging that IHC is potentially capable of indicating likely origin and identity of cellular material, Professor Sheard stated that this was possible only under strictly controlled experimental conditions. These included the carrying out of tests on known specimens that provide controls for both positive and negative outcomes. Because IHC is known to be potentially inconsistent and unreliable, processing conditions for the tissue to be identified should be “empirically determined by prior experimentation”. He considered that the experimental techniques employed by Dr Miller failed to meet these strict requirements. In particular, there was no evidence that the antibodies and the antibody detection procedures in the examined specimens worked reliably in the processing conditions in which they were examined. The specificity of the chosen antibodies was therefore called into doubt. The specimens displayed, in Professor Sheard’s opinion, a widely varying staining pattern. In some cases nerve specific antibodies stained negative control samples and antibodies to non-neural proteins were found to stain control nerve tissue. In light of this Professor Sheard concluded that it was not possible to use the experiment to reach a reliable conclusion as to the nature of the material taken from Mr Lundy’s shirt. Moreover, he considered that the photographs which had been presented by Dr Miller created an inaccurate representation of the outcome of his experiment because they failed to illustrate the marked variation in results. Only strongly positive “nerve specific” results were portrayed and reported on by Dr Miller. This suggested that the photographic evidence had been presented in order to support a specific thesis rather than to allow for objective evaluation.

53. As to the condition of the specimens, Professor Sheard said that they were “poorly fixed [and] necrotic ... so small that they were predominantly edges.” ‘Fixing’ of specimens can be achieved by a process of air-drying, literally a process of waving the specimens in the air so that their condition becomes ‘fixed’ by the flow of air on to them. Professor Sheard referred to research by Fountoulakis and others on ‘Post-mortem changes in the level of brain proteins’ which, he suggested, showed that brain proteins are subject to progressive degradation after they are removed from the body. The report suggested that glial fibrillary acidic protein (GFAP), one of the markers crucial to Dr Miller’s identification of the specimen, was undetectable after 72 hours. This is of unquestioned significance in assessing the scientific evidence in relation to this aspect of the case because glial cells are normally only found in the brain and spinal cord and predominate in these areas.

54. It had been suggested in evidence during Mr Lundy’s trial that the sample of tissue had been adequately preserved by rapid air-drying but Professor Sheard stated that examination of the basic histological features of the specimen indicated a necrotic rather than a preserved state. This would suggest that the fragment had not been air-dried within a short time. As it was, the time taken for the tissue to dry was unknown. The extent of degradation or autolysis (self directed destruction or disintegration) could not be measured. Experimental validation of the techniques and antibody/protein combinations would be required to support any reliable conclusion,

in the professor's opinion, but no process of such an experimental validation exists at present.

55. Professor Helen Whitwell provided a report to the appellant's legal advisers on 12 April 2010. She was a Home Office pathologist until 2009 and head of department and Professor of Forensic Pathology at the University of Sheffield between 2000 and 2004. She reported on the identification of the material from Mr Lundy's shirt and the time of death issue. The first of these will be considered in this section of the judgment.

56. Professor Whitwell's report, in relation to tissue identification, appears to have dealt exclusively with the ESR slide and the samples that Mr Sutherland had taken from Mr Lundy's shirt, although this is not entirely clear. She has certainly viewed Dr Miller's slides at some stage. In any event, from her examination of the ESR slide she considered that it comprised "possible cellular material" but that it was impossible to determine the nature of the cells. She said that "foreign material was present as well as possible degenerate cells." As a result of this examination and her inspection of the samples from the shirt, Professor Whitwell concluded that the minute fragment of tissue involved was probably cellular material. It was either human or animal but its nature could not be determined beyond that. She expressed very serious concerns about conclusions reached on a sample which was so minute, particularly since the ESR slide had not been made from the stain on the shirt until 59 days after the deaths of the deceased. She disagreed with Dr Temple-Camp about the level of preservation of the tissue. In her opinion the state of preservation was extremely poor and a diagnosis of its exact nature was impossible.

57. In an affidavit sworn on 24 November 2012 Professor Whitwell addressed the opinion given by Dr Synek to Mr Behrens at the time of trial to the effect that the tissue on Dr Miller's slides was CNS. Professor Whitwell was of the view that such a conclusion could not have been reached without Dr Synek having viewed the actual slides. (It will be recalled that she had only seen photographs of the slides.) A possible alternative to the actual slides would be low power photographs of them which would allow for observation of greater detail. Professor Whitwell had certainly viewed Dr Miller's slides by this stage. She pointed out that the photographs that had been provided with Dr Miller's report had been high powered and, on the basis of her examination of them, and echoing the opinion of Professor Sheard, she found them highly selective. She disagreed therefore with the conclusion expressed by Dr Synek to Mr Behrens and considered that it was not possible to reach any meaningful opinion on the nature of the material.

58. Dr Synek also provided an affidavit to Mr Lundy's lawyers. It is dated 22 November 2012. She explained that her involvement in the case initially had been confined to advising on whether brain tissue would be recognisable pathologically, if

found on a shirt, after 30 hours from the time that it was removed from the body. She conducted tests which indicated that tissue components in a proportion of cells could be recognised microscopically after about 30 hours. She had not been informed that a slide from the stain on the shirt had not been taken until 59 days after the deaths. Even after 30 hours tissue components in a significant number of cells in her experiment had degraded. She would therefore not expect detail to be detectable after 59 days without fixation (by air drying) in the meantime.

59. On the question of her interpretation of the photographs accompanying the report of Dr Miller, she said that having looked at them and having consulted a number of colleagues, she informed Mr Behrens that she thought that there was CNS tissue present. But she had not been offered any tissue sections from Dr Miller to review. Nor was she made aware that she had been presented with only a selection of the photographs which had been taken during Dr Miller's experiments. She also stated that the appellant's legal advisers had offered her the opportunity to inspect the actual slides taken by Dr Miller for the purpose of providing an up-to-date opinion but she considered herself not to be sufficiently qualified to review them.

60. In an affidavit dated 19 November 2012, Kevin Gatter, Professor of Pathology at the University of Oxford, endorsed the report and conclusions of Professor Sheard. He did not, at that stage, examine either the ESR slide or the slides prepared by Dr Miller. In his view this was unnecessary because both Professor Sheard's report and that of Professor Whitwell (which he had also reviewed) were "very comprehensive, clearly documented and well illustrated".

61. The affidavits and reports obtained by the appellant's legal advisers led to rejoinders from the Crown. In an affidavit of 12 December 2012, Dr Miller directly addressed the averments contained in the reports and affidavits of Dr Synek, Professor Whitwell, Professor Sheard and Professor Gatter. He said that the cellular sample was smeared into the shirt's fibres. He considered that the fact that the sample had been smeared and because it was tiny meant that there had been very rapid air drying of the sample and this accounted for its good state of preservation.

62. On Dr Synek's reservation about the state of preservation of the sample in view of the elapse of 59 days, Dr Miller pointed out that the polo shirt was inside out when it had been found in a suit holder in Mr Lundy's car. It was bagged and maintained in that state until it went to the forensic laboratory. The very rapid drying of the smeared tissue on the shirt dramatically slowed or prevented the autolysis or degradation of tissue that would otherwise be expected.

63. Dr Miller strongly disagreed with Professor Whitwell's portrayal of his presentation of the photographs which accompanied his report as misleadingly

selective. He pointed out that he had IHC technologists mount a multi-issue control array (MCA) on the same slides as the sections from Mr Lundy's shirt. The MCA contained up to 90 or more small pieces of tissue of different types, arranged in a grid-like pattern. By using the MCAs and studying them along with the tissue in the sample from the shirt, Dr Miller claimed that it was possible to establish that the IHC stains were performing exactly as they should if the tissue was CNS tissue. He suggested that it was not likely that during a criminal trial anyone would want to view photographs of the 90 individual control samples. To prepare a concise report it was necessary for him to be selective.

64. Dr Miller's essential refutation of Professor Whitwell's criticism of his techniques was contained in the following paragraphs of his affidavit:

"44. ... the central issue we are dealing with here is the quality and reliability of the IHC that I performed, which involved my use of IHC to determine whether CNS tissue (normal CNS, not abnormal CNS) was present on Lundy's shirt. Virtually all diagnostic pathologists use IHC, but I am one of a very small number of pathologists whose practice is limited to IHC. Dr. Whitwell's CV may confirm that she is not qualified to judge the work that I do, and she does not have the in depth experience and knowledge of IHC that I have developed over the past 30 years. Although Dr. Whitwell and I are both Pathologists, we operate in entirely different specialities.

45. It appears that Dr. Whitwell attempted to diagnose the tissue remains in [the samples from the left sleeve and the chest pocket of Mr Lundy's shirt] on April 15, 2009. Dr. Whitwell notes in [her report] that she identified GFAP being strongly positive along with variable positivity for the other three immunohistochemical markers present in brain tissue. Unfortunately Dr Whitwell did not complete her identification as she failed to consider the three immunohistochemical markers which brain tissue does not express.

46. This indicates a lack of diagnostic quality and rigour by Dr. Whitwell. Her comments on my interpretation of the results are wrong and I strongly disagree with her conclusions."

65. Dealing with Professor Sheard's report, Dr Miller accepted that the professor was knowledgeable about the theory of IHC but suggested that he had approached the question of the identification of the material on Mr Lundy's shirt from the perspective of a research physiologist rather than that of a diagnostic pathologist. Dr Miller argued that it was inappropriate to apply theoretical research standards to the forensic

task of identifying material. As a diagnostic pathologist Dr Miller did not have the “luxury” of maintaining strict control over every aspect of his experiments.

66. In relation to Professor Sheard’s criticism that there had been no evidence that the antibodies and antibody detection procedures worked reliably under the processing conditions applied to the specimen and that the specificity of the chosen antibodies was therefore called into doubt, Dr Miller was scathing. He suggested that if Professor Sheard practised as a diagnostic pathologist, he would be able to recognise, from looking at the MCA, that the record of antibody specificity was right on the slide. The antibodies used on Mr Lundy’s shirt had been validated for specificity and sensitivity before they were used to assist in making a diagnosis.

67. Dr Miller countered Professor Sheard’s comments about the variability in staining patterns on the tissue samples by saying that this was a commonly encountered phenomenon. He dismissed the professor’s concerns that some of the nerve related antibodies had stained non-nerve tissue. This was “an expected finding”. Dr Miller claimed that it “further validates the quality of the stain” but, significantly, he omitted to explain why that should be so. He rejected Professor Sheard’s claim that the tissue sample was necrotic. He suggested that the shrinking and darkness of the cell nuclei could be explained by the compression of the tiny fragment when it was smeared on the shirt. Again, however, Dr Miller did not elaborate on how compression of the fragment brought about darkening and shrinking. He claimed that if the tissue was necrotic it would not have been possible to “appreciate the presence of filamentous structures in the tissue when examining the cytoplasm of the cells on a number of the immunostains”. This argument seems somewhat circular, however. If the tissue was indeed necrotic, what might have appeared as filamentous structures could not be reliably identified as such. Whether the sample was indeed necrotic would depend, one would have thought, on examination of its actual histological features and condition rather than on whether what appeared to be filamentous structures were in fact present.

68. On the question of whether the samples examined by Dr Miller comprised mainly edges, as Professor Sheard had suggested, Dr Miller simply asserted that edge effect was something with which he was very familiar and that the professor had been wrong in his suggestion. Again he did not expand on this nor did he suggest how it could be ascertained that the sample did not consist of edges.

69. In his report Professor Sheard had stated that the pattern of GFAP reactivity did not closely resemble the appearance of GFAP on a normal brain. Dr Miller found this observation unsurprising and not at all untoward. In his view, because the specimen was “smeared” into the shirt, a different appearance from normal was to be expected because brain is a very soft tissue. Another point made by Professor Sheard concerning unknown material associated with the fibres of the shirt was countered

equally robustly. The professor had found that there were no cellular nuclei and the material appeared immunopositive for cytokeratin –in the report described as ‘CK5/6’. Dr Miller stated that this comment reflected Professor Sheard’s research based approach as opposed to “the discipline and reality” of diagnostic pathology. He suggested that what Professor Sheard’s findings represented was something that he (Dr Miller) described as the “desquamartifact”. Because human skin constantly renews itself, cells on the surface of the skin lose their nuclei and are shed (desquamated) into the atmosphere. Because they are light they float in the atmosphere until they lodge on random surfaces. These anucleate squamous cells contain abundant CK5/6 and are expected to react in the way that Professor Sheard had found.

70. Dr Miller professed to find Professor Gatter’s failure to examine the slides for himself profoundly shocking. He suggested that this failure was even more “egregious” because he had relied on the flawed opinions and misinterpretations of Philip Sheard, “an Associate Professor of Physiology, (not Pathology)”.

71. An affidavit of Allen Michael Gown, medical director and chief pathologist at PhenoPath laboratories in Seattle, Washington dated 9 April 2013 was also filed on behalf of the respondent. As well as his posts in the laboratories, Mr Gown is the clinical professor of pathology at the University of British Columbia, Vancouver. He specialises in diagnostic and research applications in IHC. At the request of the New Zealand Crown Law Office, he carried out a peer review of Dr Miller’s work on the Lundy case. He was also asked to comment on the affidavits which had been filed on behalf of the appellant. He inspected the slides which Dr Miller had prepared.

72. Professor Gown concluded that the H&E slides revealed the presence of tissue fragments interspersed among and partly adherent to fibres of the polo shirt. The H&E stained sections demonstrated the presence of eosinophilic, non-necrotic tissue with intact nuclei, all of which had a neural appearance. Significant findings made by Professor Gown as a result of his examination of the slides were expressed in the following paragraphs of his affidavit:

“8. Immunohistochemical studies performed using a series of antibodies including those to: 'low molecular weight' cytokeratins; cytokeratins 5 and 6; and CD45 (leukocyte common antigen) show no significant signal on the tissue fragments, and the results with these antibodies are indistinguishable from the negative control slides. In contrast, the tissue fragments are strikingly and strongly positive with antibodies to neurofilaments, synaptophysin, glial fibrillary acidic protein, and S 100, all representing proteins highly expressed, and in some cases, exclusively expressed, in the central nervous system. In many cases, e.g., with antibodies to neurofilaments and glial fibrillary acidic protein,

it is possible to discern a fibrillar pattern to the immunostaining, further confirming the neural nature of the tissue.

9. I have no issues whatsoever with Dr. Miller's methodology, and the slide preparations are of extremely high quality and easily interpreted. All the controls, both positive and negative, are excellent and more than adequate to permit definitive interpretation of the specimen in question.

10. Without any doubt whatsoever, these studies conclusively demonstrate that the tissue fragments interspersed amongst, and partially adherent to, the shirt fibres represent central nervous system tissue.”

73. Professor Gown characterised Professor Sheard’s criticism of the work of Dr Miller as intellectual gamesmanship rather than valid scientific criticism. He suggested that Professor Sheard had no “real world experience” in interpreting IHC studies on human tissues. He was wrong, Professor Gown claimed, to describe IHC as an unreliable technique. He was also wrong, it was suggested, to characterise Dr Miller’s results as ‘experimental’. No two tissues examined in a routine pathology laboratory were fixed under identical conditions, as might be possible in a research laboratory. It was the robustness of the IHC techniques and the specificities of the antibodies which permitted its routine use to characterise tissues, classify tumours, confirm the presence of target molecules, identify organisms, etc.

74. Professor Gown expressed complete agreement with Dr Miller’s criticism of Professor Sheard’s evidence and commented that the latter’s suggestion that tissue dried for a long period of time could not demonstrate antigen retention was at odds with the body of scientific literature in which ancient, dessicated human tissues such as were found in Egyptian and Peruvian mummies had been rehydrated and successfully subjected to IHC analyses.

75. Dr Temple-Camp also provided an affidavit on behalf of the respondent. He considered that the fact that Dr Miller was able to perform histological and immunohistochemical examination on the specimen from Mr Lundy’s shirt confirmed that the tissue *must have been* fixed. Otherwise, he believed, tissue degradation would have rendered the specimen unrecognisable. But this argument is somewhat circular. A critical issue in the case is whether the specimen was in a condition whereby confident histological examination was possible. To say that the specimen could be examined does not directly confront that central question but depends on a process of backward reasoning to the effect that if histological examination was possible, the specimen must have been sufficiently preserved and must therefore have been (in parts) air-dried.

76. Dr Temple-Camp's thesis depended, therefore, on his assumption that there must have been rapid fixation of the specimen. Indeed he suggested that this occurred within "seconds to minutes" of expulsion from the brain. He has not elaborated on how this might have occurred. One can perhaps speculate that the action of the brain tissue travelling through the air from the brain to the shirt might have caused air drying but one would have thought that if this was the process by which it was achieved, fixing would have been virtually instantaneous rather than occurring up to minutes later and that all of this tiny fragment would have undergone a similar degree of air-drying and therefore fixation. All of that is essentially speculation, however. There has not been direct evidence on the point so far and it may be that the precise mechanism of the vaunted air-drying cannot be specified. But this discussion illustrates the importance of the evidence on the *real* condition of the specimen and its actual susceptibility to confident histological and immunohistochemical examination.

77. In this context it is important to note that Dr Temple-Camp has said in his affidavit that he found the sample on the ESR slide to be no more than "adequately preserved". Notably, however, he said that he was able to recognise the presence of cells and blood vessels. His use of language in relation to his identification of glial cells is perhaps significant. He said that he was able to identify what he "considered to be" glial cells. This may betoken something less than a wholly positive diagnosis. And it may well be that it was this which prompted Dr Temple-Camp and his colleagues, including Dr Pang, to consider that the matter should be referred to Dr Miller.

78. Any reservations which Dr Temple-Camp may have felt about the identification of the sample from examination of the ESR slide were utterly dispelled, he suggested, by his consideration of Dr Miller's slides. He had looked at these before the trial and he re-examined them on 29 March 2013. He has said about this later examination that "the best preserved fragments are unequivocally and unmistakably those of brain". Some fragments showed degenerative changes which, in Dr Temple-Camp's estimation, indicated a poorer degree of fixation. (He does not explain how some, presumably minuscule, parts of an already tiny specimen could be degraded and poorly fixed while other parts were well preserved indicating good fixation when the process of fixation is by air-drying.) Dr Temple-Camp said that he would not be prepared to reach a diagnostic conclusion from one fragment (referred to as figure B) where there was degeneration including darkness of the nuclei and total loss of the fibrillary background. But he had no such reservations about another fragment (figure A). In the case of that fragment, Dr Temple-Camp considered that the nuclei had preserved their shape and that the background had a fibrillary appearance typical of neuropil which is the normal meshwork background tissue of the brain and spinal cord.

79. Dr Temple-Camp trenchantly asserted that conclusions based on examination of the work of Dr Miller and the ESR slide had to survey the entire field of tissue. But

he claimed that it was wholly appropriate to select the best preserved portions such as were illustrated in the figure A fragment. Indeed, he suggested that the poorly fixed portions could be discarded or left out of account in reaching a conclusion. He purported to justify this approach by pointing to what he said was “established surgical pathology practice”. Tumours removed from patients, he said, typically show a variety of fixation patterns. Larger specimens such as those taken from bowel resections frequently show such variation. This may occur because they are removed during a long operation during which blood supply is interrupted and this may be followed by a delay in fixation in the usual chemical fixative of formalin. It is doubtful that this experience can be directly related to fixation by air-drying, however. Dr Temple-Camp explained that formalin penetrates tissue at a rate of approximately 1 millimetre per hour so that the deepest parts of the tissue continue to degenerate for some time. But he did not explain how different rates of degeneration should result from air-drying which is a completely different process from that of chemical fixation. While, therefore, it may well be appropriate to select the best fragments where there has been chemical fixation, there is no obvious reason that this is suitable where fixation has been by air-drying.

80. For reasons that are discussed in the succeeding paragraphs of this judgment, the question whether Dr Miller’s examination of the material from the shirt and the conclusions that he reached can properly be regarded as experimental has been one of the most important areas of debate in the appeal. Dr Temple-Camp acknowledged that this was the first reported case of examining tissue “derived from accidental implantation on clothing” but he strongly challenged the notion that this meant that Dr Miller’s work could be classified as experimental. He pointed out that the entire process from the retrieval of the tissue to its final examination lay within the mainstream of current surgical pathology practice. It used embedding, cutting, staining and immunohistochemical techniques that were of proven efficacy in all diagnostic laboratories throughout the world.

81. It is important not to assume that well established techniques which are traditionally deployed for the purpose of diagnosis can be transported, without modification or further verification, to the forensic arena where the use to which scientific evidence is put is quite different from that involved in making a clinical judgment. Put simply, evidence that can properly be used to reach a confident medical verdict may not measure up to the more stringent requirements that arise in the setting of a criminal trial. While, of course, it is not always required that an individual item of scientific evidence proffered in support of a specific proposition will establish its correctness beyond reasonable doubt, the overall context in which scientific evidence adduced by the prosecution is presented is that it should constitute part of a case that will prove to the criminal standard the guilt of the accused.

82. Scientific proof such as fingerprint or DNA evidence is customarily given against the background of its having been theoretically tested in, if not laboratory

conditions, at least empirical survey. The novelty of using, in a criminal trial, the type of evidence offered by Dr Miller, especially when its reliability has not been subjected to such laboratory or empirical research, does not necessarily make it inadmissible but it prompts caution as to its role in establishing guilt beyond reasonable doubt. The question of its admissibility will be discussed below.

83. The affidavits of Dr Miller, Professor Gown and Dr Temple-Camp prompted a further round of affidavits from the appellant's experts. It is not intended to rehearse all the claims and assertions made in those affidavits. Indeed, discussion of all the various averments and counter arguments in the earlier affidavits has not been attempted. A selection of what have been considered to be the principal issues has had to be made.

84. In his second affidavit Professor Sheard conducted a frontal challenge to Dr Miller's MCA. He suggested that this could not constitute a control. He pointed out that none of the tissues in the MCA had been subjected to any of the conditions experienced by the specimen from Mr Lundy's shirt before they were embedded. In order to operate as an effective control, the embedded material would have to replicate what was claimed about the condition of the specimen removed from the shirt. The MCA should have been smeared, air-dried and left in the open for several months.

85. On the question of the variability of the staining on the various slides, Professor Sheard suggested that this was important because where a specimen is partly stained dark and partly not, one has to ask why this should be so. It is necessary to question whether the darkened area is an artefact. If this is the case and the unstained area represents the correct result, diagnosis of the specimen as CNS tissue cannot be made. In this context, Professor Sheard suggested that the claim that smearing of the material on the shirt fabric had caused compression of the nuclei was "fanciful". According to Professor Sheard, what happens to brain protein immunogenicity when smeared and exposed to the air for several months is simply unknown.

86. Professor Whitwell provided a second affidavit on 11 May 2013. Again this dealt with the identification of the specimen found on the shirt and the time of death. In this section of the judgment, I will deal solely with the former of these. On this issue, Professor Whitwell confined her observations principally to the evidence of Dr Temple-Camp.

87. She pointed out that in his original statement Dr Temple-Camp had said that the specimen that he observed on the ESR slide was poorly preserved. In his final statement for trial (which is dated 15 February 2002) he appeared to have changed his view. On this occasion he said that the specimen was "adequately preserved". In a letter to a journalist of 24 November 2008, he had explained this change of mind by

saying that the state of the tissue on the ESR slide was poorly preserved but Dr Miller's slides showed tissue in a remarkable state of preservation. Professor Whitwell said that this explanation was simply not tenable. The tissue on both the ESR slide and those of Dr Miller were taken from the same stain on Mr Lundy's shirt. It was impossible that different states of preservation could be found to exist.

88. Dr Temple-Camp had suggested that the appellant's experts had not been provided with "other trial evidence bearing on the identification of the tissue". He included in his list of such evidence that stains on Mr Lundy's shirt indicated, in one instance, the possible presence of blood and, in another, traces of blood and that DNA testing showed that biological material in this stain could have come from Mrs Lundy. Professor Whitwell dealt with this in her second affidavit. She said that the presence of DNA from one's wife or child or even blood flakes, if the parties live together as a family, is not only not unusual, it was common place.

89. Professor Gatter also provided a second affidavit. By the time that this was prepared he had inspected the ESR slide and Dr Miller's slides. This examination was carried out jointly with his colleague, Dr Waney Squier, and they provided a joint report based on that examination. Dr Squier is a consultant neuropathologist to the Oxford University John Radcliffe hospital and honorary clinical lecturer in the University of Oxford. Both consultants agreed with Professor Whitwell's conclusion that from the morphological appearance of the substance on the slides it was not possible to draw any definite conclusions as to the nature of the substance. They both identified fibres and some cellular tissue but said that it was not possible to conclude that it was brain tissue. Indeed, they felt that it was impossible even to say that it was likely to be brain tissue.

90. Professor Gatter and Dr Squier addressed the question of the use of immunohistochemistry in the forensic context. While accepting that this was a commonly used diagnostic tool, they pointed out that its use in the forensic setting was innovative. In a clinical context it is, the consultants said, entirely standard practice to selectively present results in order to support a diagnosis made on the basis of a clinician's skill and experience but that this might not be appropriate in a forensic context, particularly if interpretation of results is presented as providing an absolute or incontrovertible conclusion.

91. The two experts accepted that the staining on the slides was consistent with brain tissue. But it was also consistent with other animal tissue. Even if the substance was brain, it was impossible to say that it was human brain or even mammalian brain. The stain on the shirt, if caused by a processed meat product, could produce an appearance similar to that which they observed on the slides. Finally, they said that if the substance was brain tissue deposited on the shirt following a traumatic injury, they would have expected to find red blood cells and none was present.

The principal areas of controversy on the CNS issue

92. Without attempting an exhaustive list of the areas of controversy that emerge from a consideration of all the evidence that has been presented on this issue, the following appear to the Board to be the principal matters which are either in dispute or remain unresolved:

- i) Is IHC known to be inconsistent and unreliable – or is this a criticism based solely on a theoretical approach to its use? Is IHC only to be regarded as capable of indicating likely origin and identity of cellular material, if examined under what Professor Sheard described as “strictly controlled experimental conditions”? An associated question is whether the experience of its use in diagnostic pathology provides a dependable foundation on which to draw, in order to sustain Dr Miller’s conclusions.
- ii) Should the circumstance that IHC had not been previously used in a forensic context affect how it should be regarded as an element of proof that the substance retrieved from Mr Lundy’s shirt was CNS tissue?
- iii) What is the extent and significance of the variation of staining on Dr Miller’s slides? Is it legitimate to select those slides which appear to show good preservation and produce results that are indicative of the presence of CNS tissue and to disregard those which produce ambivalent or inconsistent results? Does the variation of staining indicate the possibility of the presence of artefacts?
- iv) What is the state of preservation of the tissue on (a) the ESR slide; and (b) Dr Miller’s slides? Is it possible that parts of the fragment from the shirt were well preserved and parts not? What is the likely mechanism of air-drying in this instance? Is it possible that the tissue smeared on to the ESR slide was poorly preserved while samples taken by Dr Miller from the same stain were well preserved?
- v) Are glial cells and blood vessels detectable on the ESR slide? What is the significance of the presence (or absence) of these features?
- vi) Can the shrinking and darkness of the cell nuclei be explained by the compression of the tiny fragment when it was smeared on the shirt?

vii) Is it possible to deduce that parts (at least) of the specimen taken from the shirt were not necrotic because histological and immunohistochemical examination of the specimen was possible or is this a circular argument?

The evidence obtained after the trial on the time of death issue

93. On this issue, Professor Whitwell was categorical. She said in her report that it was well recognised that use of stomach contents as an estimation of time of death was completely unreliable. A meal can remain in the stomach for several hours following consumption. She was unaware of any literature that related estimation of the time of death to the smell of the stomach contents and suggested that the claim that they were related was without scientific basis.

94. Professor Bernard Knight was professor of forensic pathology at the University of Wales, College of Medicine from 1980 until 1996. He is the author, co-author or editor of 10 textbooks on forensic medicine and forensic pathology. These include, "The estimation of time since death in early post mortem period". In an affidavit provided by Professor Knight on 6 April 2010 he said that the use of stomach contents to estimate how long a person had been dead was so unreliable as to be of little value. He rejected the evidence of Dr Pang that the absence of gastric smell was an important determinant of time since death as "utterly without foundation". There was no reputable scientific publication which would support the claim.

95. Dr Pang responded to Professor Knight's affidavit. He said that he had acknowledged that he was not a physiologist and that a physiologist would give a far more up to date and accurate answer than he could about the passage of stomach contents through the digestive system. He maintained, however, that, although stomach contents could not point to a precise time of death, they could be regarded as capable of giving a general indication of the time that death occurred. He referred to a publication of 2003, *Forensic Medicine: Clinical and Pathological Aspects* which noted that when 90% of the last meal was found in the stomach, the last food intake was probably within the hour prior to death.

96. Dr Pang agreed that absence of gastric smell is not noted in medical literature as an indicator of time of death. He denied having suggested to the jury that this was an important determinant. It was merely one factor which "added to the picture". He said that it would not have significantly affected "the outcome of my estimate".

97. Professor Barbezat also produced an affidavit on this subject. He pointed out that it is only when stomach acid and food are mixed that an odour is produced. In this instance, the food and acid in the stomachs of the two victims had not been in contact long enough to produce the smell. The appearance of the food suggested that

it had barely had a chance to be involved in the digestive process. The smell of vomit takes about an hour (with considerable possible variation) to develop after food is ingested. The absence of that smell was not to be dismissed, therefore, as a finding of no significance.

98. The professor accepted that it was difficult to determine how long someone had been dead solely by examination of stomach contents. But it was much less difficult, he suggested, to assess the state of digestion and to determine how long someone was alive after having eaten a meal. In the case of Christine and Amber Lundy there was “good evidence” that they were killed before the digestive process had had time to become established. The fact that these findings were present in both bodies added significantly to “the weight of reasoning”. Death could have happened within 30 minutes of eating the meal and, almost certainly, within 90 minutes. Professor Barbezat reasoned that since the meal was purchased at 17.43, and the victims lived about 10 - 15 minutes away from the restaurant where it had been purchased and since it is known that Christine was alive (taking a phone call) at 18.56 and that it is unlikely that Amber, as a child, would have had her meal unduly delayed into the night, and since the stomach contents were comparable at autopsy, if they had ingested their meal at about 18.15, their deaths would most likely have occurred by about 19.15.

99. Professor Knight provided a second affidavit. His disagreement in this affidavit with the opinions of Dr Pang was largely taken up with a discussion about evidence given in an earlier case of *Truscott*. It is unnecessary to rehearse the debate engaged in between the two experts on this issue. In relation to Professor Barbezat’s evidence, Professor Knight suggested that the acceptance that it was difficult to determine how long someone had been dead solely by examination of stomach contents was impossible to reconcile with Professor Barbezat’s later claim that it was easier to determine how long someone had been alive after eating a meal.

100. An affidavit from Paul Ciclitria, professor of gastroenterology at King’s College, London was also filed by the appellant on this issue. The relevant paragraphs of his affidavit are these:

“5. as a gastroenterologist I can categorically state that:

(a) The evidence provided at trial regarding the timing of gastric emptying is simply incorrect. This estimated that the time of death was within an hour based on the stomach contents of both victims. Gastroenterology simply does not permit such precision. The current state of knowledge in my discipline is that gastric emptying can take six hours or more, and that there are considerable variables pertaining to

this - to give but a few examples - whether the individual concerned is under stress, including but not limited to that resulting from a violent confrontation, or taking any medication which interferes with digestion.

(b) The lag phase is less predictable than the emptying phase and is subject to a wider range of variation in duration, but either or both phases may be prolonged by specific external variables such as stress, or by intrinsic factors such as the size and nature of the meal.

(c) The evidence of Dr Pang and Dr White regarding the absence of gastric smell is also simply incorrect, and has no basis whatsoever in any scientific literature of which I am aware.

6. The use of either of these methods (either individually or in combination) to ascertain time of death to within an hour, as was suggested at trial, is scientifically impossible. Use of gastric smell is a scientific nonsense and at its very highest, evidence of gastric emptying can be used to give a very rough estimate of time of death, with a margin of at least six hours (subject to variables such as those described above). This is of no use where it is necessary to establish time of death to (as here) within an hour ...”

101. Finally, Nicholas Diamant, professor of the department of medicine, Queen’s University and emeritus professor of the faculty of medicine at the University of Toronto, supplied an affidavit on behalf of the appellant. He specialises in gastroenterology. The following are the relevant passages from Professor Diamant’s affidavit dealing with Professor Barbezat’s evidence:

“6. Gastric emptying is a very complex phenomenon, and in reading over the information I have been provided, including the testimony by Professor Barbezat, I do not consider his concentrating on and descriptions of the durations of the lag and emptying phases and gastric acidity in order to specify a time of death to a very limited time period, are able to do that.

7. As the evidence I provided in the *Truscott* case stated, there is a wide variation in range of gastric emptying. This is also true for the digestive process. In this regard, I refer to Horowitz "Is the stomach a useful forensic clock?" (Aust NZ J Med 1985: 15, 273-2768). In his final paragraph, he gives useful guides to applying gastric contents as related to the time of death, and I quote the last three sentences:

"Third, the confidence limits of any opinion should take into account the *many* possible variables, so that the estimate given should cover a range of at least some hours. Estimates to within half an hour clearly cannot be justified in the light of present knowledge of patterns of gastric emptying. For forensic purposes the stomach is a very poor timekeeper."

102. Professor Diamant was also critical of the findings and evidence of Dr Pang for largely the same reasons given by Professor Knight.

The effect of the post trial evidence on the time of death issue

103. The following conclusions on the time of death issue can be made, based on the evidence offered by the various consultants:

- i) Examination of stomach contents *alone* cannot provide guidance as to the *precise* time of death;
- ii) There is nothing in reputable medical literature to support the claim that the absence of smell from stomach contents is an indication of the time of death;
- iii) The preponderance of the evidence established that gastric emptying can take place several hours after food has been ingested and that a wide variation in duration is possible;
- iv) The lag and the emptying phases may be prolonged by specific external variables such as stress, or by intrinsic factors such as the size and nature of the meal;
- v) Authoritative evidence is now available to the appellant that gastric emptying can be used to give, at best, a very rough estimate of time of death, with a margin of at least six hours.

104. Although many of the essential elements of the evidence provided by Professors Whitwell, Knight, Ciclitria and Diamant had been supplied to Mr Behrens by Dr Stables and Professor Vanezis and although some progress was made in the cross examination of the Crown's witnesses on the subject, their evidence was not subjected to the critical onslaught that is represented by the collective force of the further evidence of the four consultants who have provided affidavits on behalf of the

appellant. If their forcefully expressed opinions were accepted, the time of death evidence based on stomach contents would be wholly discredited. While Mr Behrens made some inroads on Dr Pang's evidence in particular, the Crown case on this issue remained viable when the jury came to consider their verdict. This is highly significant because of the central role occupied by the prosecution claim that the deaths had occurred between 7 and 7.15pm on 29 August. That said, it has to be acknowledged that the evidence which the appellant has obtained post-trial is not to the effect that the murders *could not* have occurred during the narrow time frame which the Crown case posited. If accepted, however, it eliminates any scientific support for the claim that this was when the murders must have taken place.

105. In his letter to the Registrar Mr Behrens suggested that he was reluctant to press home the case that the scientific evidence did not support the Crown's case on time of death lest this should prompt a shift on the part of the prosecution to an alternative timing for the murders which might create new vulnerabilities for the defence. Under the heading "general comment" Judge Behrens said this in his letter:

"I believed the Crown theory of the case, ie the around 7pm murders, was nonsense. I believed that a far more realistic theory was that the deaths had occurred after 11pm, perhaps in the early hours of the next day. This theory was consistent with the phone call evidence, the lights on evidence, the computer evidence, the petrol consumption evidence, the prostitute evidence, the glasses beside the bed evidence. It was also consistent with the drive not having been made in rush hour traffic from Wellington to Palmerston North. I was aware that the Crown could be pushed into changing its theory.

On the opinion evidence about stomach contents that I had, I made the decision not to call evidence but rather to challenge the Crown experts with that evidence ... It is true that the trial judge put the issue bluntly to the jury but pre-trial I was not to know that the Crown would not change to the after midnight theory ..."

106. While it is true that before the trial one could not have been certain that the prosecution might not switch to an alternative theory of the timing of the deaths, after the trial began it should have been clear to counsel that a change of the Crown case on such a vital issue was unfeasible. Not only had the prosecution made this a centrepiece of its presentation of the case to the jury, it had committed central parts of the evidence to its promotion of that hypothesis. Quite apart from the evidence of Dr Pang and Professor Barbezat, the evidence in relation to the tampering with the computer was designed to bolster the Crown's case as to the timing of the deaths.

107. In any event, the scientific *feasibility* of the murders having been committed between 7 and 7.15pm was - and is - a constant. The importance of forging ahead with the challenge to the medical evidence on this issue was not to establish that the murders *could not have taken place* during this narrow window of opportunity but to demonstrate that the medical evidence did not provide any scientific support for the proposition that they had in fact occurred at that time. The Board cannot accept that apprehension that the prosecution might change its position mid-stream about the timing of the deaths constituted a good or sufficient reason not to call witnesses available to the defence which, if accepted, would seriously undermine the scientific support for the Crown's theory.

108. Indeed, quite apart from the inherent unlikelihood of its wishing to do so, it is highly questionable that the prosecution would have been permitted to advance an alternative theory to one which it had earlier so firmly espoused. The Crown had committed its case unequivocally to a time of death at about 7 to 7.15pm and that was the case which the defendant had to meet. It is at least strongly arguable that the defence could not be required, at a late stage, to answer a case which was quite dramatically different from that which had been presented against him.

The computer evidence obtained after the trial

109. The appellant's advisers engaged Michael Anthony Chappell, a computer forensic examiner and analyst, to comment on the computer evidence. He prepared a report in April 2012 and provided an affidavit on 19 November 2012. Mr Chappell said that Mr Kleintjes was wrong to deny that the disordering of the registry files was due to a virus. Mr Chappell's examination of the computer revealed that the computer had become infected with the virus, JS KAK Worm, in June 2000 via an email from Salu Vino estate. He was able to demonstrate that the virus had entered and disordered the registry files. Moreover, when he entered a security programme on the hard drive the virus was deleted. With the virus deleted, over a period of days Mr Chappell started, shut down and re-started the computer. This caused the registry files to return to their correct order. Mr Chappell therefore concluded that there was no evidence of manipulation of the date or time. Mr Kleintjes had assumed that the computer had not been infected with a virus because he believed that it had effective anti-virus software, said Mr Chappell. In fact the software was out of date. And, in any event, the email scanner had not been turned on and emails received would not have been checked even if the anti-virus programme had been operating.

110. Changing the time on the computer by means of a floppy disk would not leave any trace that the time had been altered, Mr Chappell said, agreeing with Mr Kleintjes. But there would be evidence that the floppy disk had been introduced on the swap file, the registry files and the system files and no such evidence was present on any of these files.

111. Mr Chappell referred to Mr Peacock's report and in particular to his observations about manual access to the root directory on 29 August (as to which see para 48 above). If Mr Peacock had been right about manual access to the root directory, Mr Chappell would accept that this would constitute evidence of manipulation of the time. But he was wrong. On the Lundys' computer system both command.coms, that in the windows directory and that in the root directory, are automatically accessed when the computer is switched on.

112. Mr Kleintjes produced an affidavit responding to Mr Chappell. He accepted that the virus could have caused disordering of the files and stated that he did not know that when giving evidence at the trial. He suggested, however, that this was merely a possibility and that neither Mr Peacock nor Mr Chappell had established that the virus was in fact the cause of the disordering. He claimed that Mr Peacock, Mr Chappell and he were agreed that the computer shut down time could have been manipulated without leaving a trace by using the date/time control panel or by using the command.com file. Mr Kleintjes also pointed out that he had been a prosecution witness in a trial in which Mr Chappell had been the defendant.

113. Because of the conflict of interest that Mr Chappell presented, another computer expert was engaged to respond to Mr Kleintjes' affidavit. Allan Watt had reviewed the computer evidence on behalf of the appellant between 2003 and 2008 but thereafter had not been able to become involved in the case because he was an employee of the New South Wales police force. Since leaving that employment he has felt able to become concerned in the case again and he provided the replying affidavit to Mr Kleintjes.

114. Dr Watt asserted that the KAK virus had caused the disordering of the files. He accepted that the method demonstrated by Mr Kleintjes at trial could be employed to alter the time but said that this required an advanced level of knowledge. He scoffed at the notion that Mr Lundy would play around with the date/time changing method on the computer. It was most unlikely, he believed, that he would do this in order to ascertain whether changing the time could be detected since the only way in which one could check if a trace had been left would be by use of a forensic write blocker and other forensic software.

The current state of the computer evidence

115. It seems clear that the KAK virus was at least possibly to blame for the disordering of the registry files. If manipulation of the controls was responsible, this could only have been achieved by changing the date rather than the time control. At most, therefore, the disordering of the registry files indicated that someone had been experimenting with the date (not with the time) control. It would be possible to

change the time control without leaving a trace in the manner demonstrated by Mr Kleintjes but this would require advanced knowledge on the part of the person who carried it out. Achieving a time change in this way would have no obvious connection with experimenting with the controls. At most the disorder of the registry files *might* have occurred because of experimentation but this would bear no relation to changing the time in the way that Mr Kleintjes showed that it could be changed.

The principles governing the admission of new evidence

116. The appellant seeks to introduce all the evidence obtained on his behalf which has been outlined above. The jurisdiction of the New Zealand Court of Appeal to allow an appeal on the ground of fresh evidence was described by Richardson J in *R v Crime Appeal (CA 60/88)* (1988) 3 CRNZ 512 at p 513:

“The jurisdiction to allow an appeal on the ground of discovery of fresh evidence is derived from s 385(1)(c) [of the] Crimes Act [1961] which provides that the Court shall allow an appeal against conviction if it is of opinion that on any ground there was a miscarriage of justice. This Court has refrained from attempting to set any exclusive test which should be applied in order to determine whether the fresh evidence is of a nature sufficient to establish that there was a miscarriage of justice at the trial. The overriding test must be the interests of justice (*R v Arnold* [1985] 1 NZLR 193, 196). In general the evidence must be new or fresh in the sense that it was not available at the trial and be relevantly credible and of a nature that, if given with the other evidence adduced, might reasonably have led the jury to return a different verdict (*R v Fryer* [1981] 1 NZLR 748, 753 and the cases referred to there).”

117. This formulation was approved in *R v Bain* [2004] 1 NZLR 638 (CA). In that case Tipping J, delivering the judgment of the court, elaborated on the court’s approach to the admission of new evidence in para 22:

“An appellant who wishes the Court to consider evidence not called at the trial must demonstrate that the new evidence is: (a) sufficiently fresh; and (b) sufficiently credible. Ordinarily if the evidence could, with reasonable diligence, have been called at the trial, it will not qualify as sufficiently fresh. This is not an immutable rule because the overriding criterion is always what course will best serve the interests of justice. The public interest in preserving the finality of jury verdicts means that those accused of crimes must put up their best case at trial and must do so after diligent preparation. If that were not so, new trials could routinely be obtained on the basis that further evidence was now

available. On the other hand the Court cannot overlook the fact that sometimes, for whatever reason, significant evidence is not called when it might have been. The stronger the further evidence is from the appellant's point of view, and thus the greater the risk of a miscarriage of justice if it is not admitted, the more the Court may be inclined to accept that it is sufficiently fresh, or not insist on that criterion being fulfilled.”

118. For the appellant, Mr Hislop QC was disposed to accept that a threefold test should be applied in deciding whether new evidence should be admitted. He based this on what was said by Tipping J at para 26 of *Bain*:

“...there are in substance three screens or controls which the Court applies in a further evidence case. The first is concerned with freshness, the second with credibility, and the third with whether the new evidence is such that it might reasonably have led to a finding of not guilty if called at the trial ...”

119. This passage must be read against the background of Tipping J’s earlier observation (at para 23) that “[t]he criteria of freshness and credibility govern whether the new evidence should be admitted”. This might appear to suggest that only the first two of the three “screens” are applied at the stage where a decision is taken as to whether to admit evidence. But as Tipping J (in para 22, quoted above) was careful to point out, the stronger the further evidence is from the appellant's point of view, the more likely it is to be admitted, whether or not it can be described as “fresh”. This reflects the nature of the overriding test which is that the new evidence should be admitted if the interests of justice require it.

120. The Board considers that the proper basis on which admission of fresh evidence should be decided is by the application of a sequential series of tests. If the evidence is not credible, it should not be admitted. If it is credible, the question then arises whether it is fresh in the sense that it is evidence which could not have been obtained for the trial with reasonable diligence. If the evidence is both credible and fresh, it should generally be admitted unless the court is satisfied at that stage that, if admitted, it would have no effect on the safety of the conviction. If the evidence is credible but not fresh, the court should assess its strength and its potential impact on the safety of the conviction. If it considers that there is a risk of a miscarriage of justice if the evidence is excluded, it should be admitted, notwithstanding that the evidence is not fresh.

121. The requirement that evidence be fresh can be of less critical importance in cases involving scientific evidence. In *Wallace v R* [2010] NZCA 46, a case in which

it was sought to introduce new forensic evidence, Hammond J touched on this question in para 48:

“Before we approach the particular scientific concerns in relation to the DNA evidence, we must also consider the appropriate principles to apply on a miscarriage appeal. An appropriate starting point is Lord Judge CJ’s recent restatement of the bedrock principle for the criminal justice process: “The objective of the criminal justice process is that after a fair trial there should be a true verdict”. In an imperfect world, something may go wrong with a trial. It follows that, with respect to a miscarriage appeal, the focus has to be on the safety of the verdict, however a miscarriage has been caused. It must also follow that, in principle, a critical reliance on “bad science” *could* lead to an unsafe or wrong conviction. That seems to have been recognised, at least in principle, by the Supreme Court in granting leave to appeal in *R v Gwaze*. The present point is that, on a “bad science” argument, the door can never be closed even if the “better science” is not “fresh” in the conventional sense.”

122. The reference to “bad science” in this passage prompted some debate on the hearing of this appeal on whether various elements of the scientific evidence given at the trial on behalf of the prosecution could be so characterised. The Board does not consider it helpful to make a pre-emptive judgment as to whether the scientific evidence led by the Crown (or, for that matter the evidence which the appellant wishes to adduce) can be described as “bad science”. In the Board’s view, Hammond J was doing no more than to indicate that where a case against an accused rested exclusively or principally on scientific evidence, when on an appeal, application is made to have admitted new scientific material which presents a significant challenge to that evidence, the court should not be astute to exclude the new material solely because it might have been obtained before the trial. This is the approach which the Board would endorse.

123. It was submitted on behalf of the appellant that, if available evidence was not led at trial because of the error of counsel, it should generally be admitted. Reliance was placed on the decision of the Supreme Court of New Zealand in *Fairburn v R* [2010] NZSC 159; [2011] 2 NZLR 63. The appellant in that unusual case had been convicted of murder. Her car had been in collision with an oncoming vehicle while her former partner was clinging to the bonnet of the car. Her defence on trial was that she had driven as she did because she was fearful of him and that she intended to stop at a police station to have him removed. Defence counsel had informed the jury that Ms Fairburn’s defence to the charge of murder was that she had acted in self defence. A possible alternative line of defence was that the collision was an accident. Counsel candidly accepted that she had been wrong not to call evidence from a vehicle

accident analyst who was able to show that, whatever preceded the collision, that event could have been accidental.

124. The Court of Appeal refused to admit the analyst's report saying that it did not constitute evidence that was either fresh or cogent. An appeal against that decision was allowed by the Supreme Court. Delivering the judgment of the majority, Blanchard J said (in para 33) that the evidence "must be regarded as 'fresh' evidence" because of the error of counsel. Later in the same paragraph, however, Blanchard J said that "it would be contrary to the interests of justice to rule the evidence out on the ground that it did not qualify as 'fresh'." Significantly, the majority also found that the evidence was cogent.

125. The Board considers that the principal reason for admitting the evidence in the *Fairburn* case was that it was in the interests of justice that it should be admitted rather than that the evidence should be regarded as "fresh". In general, fresh evidence in this context is evidence which could not have been obtained with reasonable diligence before the trial. Plainly, in *Fairburn* the vehicle analyst's report could have been obtained in advance of the trial. It could not be transformed to a condition of "freshness" simply because of counsel's error in failing to commission it.

126. More importantly, the judgment of the majority in *Fairburn* does not support the claim that where available evidence was not led at trial due to error of counsel it should generally be admitted. Such evidence must be submitted to the same sequential testing that should be applied to all species of new evidence as described in para 118 above.

Application of the principles to the new evidence

127. The proffered new evidence is plainly credible. Quite apart from the fact that the experts who have provided it are distinguished in their fields, the challenge that they have presented to the Crown evidence has been closely and persuasively argued. It is not for the Board, of course, to express a view as to how the many, hotly contested issues will be resolved. And the Board is conscious that, in many instances, the last word on the competing claims may not yet have been spoken. All that the Board can do, in terms of evaluating the credibility of the new evidence, is to make a judgment as to whether, in light of its current state, including the refutation that has been presented by the respondent, the evidence has a credible core. In the Board's view, the new evidence in relation to the three main issues discussed, (viz the identification of the specimen from the shirt, the time of death and the computer) is unquestionably capable of belief as it stands at present.

128. The appellant did not seek to argue that the new evidence was fresh in the sense that that term is used in the context of its admissibility on appeal. All of the evidence *could* have been obtained before trial. Indeed, many of the elements of the so-called new evidence were already available to the defence team but, for whatever reason, were not deployed to their full possible effect – see discussion of the time of death issue in paras 91-105 above. In these circumstances, it is important to recognise the need to hold the balance between the ‘one trial’ principle and the interests of justice. As Tipping J said in *Bain*, “the public interest in preserving the finality of jury verdicts means that those accused of crimes must put up their best case at trial and must do so after diligent preparation”. But where the new evidence presents a direct and plausible challenge to one of the central elements of the prosecution case, this factor ceases to be of such importance.

(a) the time of death issue

129. The essential elements of the defence case on time of death were available to trial counsel. As already observed, they were deployed to some effect in cross examination. But there is now a welter of evidence available from a number of highly reputable consultants which, if accepted, would nullify the claimed scientific support for the time of death which was so central to the Crown case. In these circumstances, the Board is in no doubt that the interests of justice demand the admission of the new evidence on this subject.

(b) the identification of the specimen from the shirt issue

130. In relation to the specimen recovered from the appellant’s shirt, a further consideration arises. Counsel conceded that this was CNS tissue from Mrs Lundy. At the time that concession was made, Mr Behrens had received advice on Dr Miller’s identification of the material as Mrs Lundy’s brain tissue. That advice not only did not challenge Dr Miller’s opinion, it endorsed his conclusions. What Mr Behrens did not know was that, before he consulted Dr Miller, Detective Sergeant Grantham had asked a neuropathologist, Dr Heng Teoh, to view the ESR slide. In a report form of 10 January 2001 the detective sergeant had made the following entry about the ESR slide:

“Dr Pang ... suggested a neuropathologist should be able to view the slide and be able to identify the cells by morphology, (appearance). He suggested a Dr Heng Teoh.

On Tuesday 9/1/2001 I met with Dr Teoh and he viewed the slide. He would only commit to saying the cells are tissue cells. He opined that

the time lapse between the murders and the preparation of the slide, (some 58 days) was too long. The cells had degenerated badly.

What did concern me about Dr Teoh was that he was quite clear that he did not want to be involved in a police investigation and did not want to have to give evidence in any court proceedings. When he looked at the slide he commented that he did not think that he, (Mark Lundy) should be convicted of murder on the strength of the cells in the slide. I did not comment about further supporting evidence. He further pointed out that just because Christine Lundy's DNA was on his shirt didn't mean a lot, as she was his wife. He later commented that this case may have to remain an unsolved mystery."

131. It was accepted by Mr Mander, who appeared for the respondent, that the document in which these passages appeared should have been disclosed to the appellant's legal team before trial. In fact it was not disclosed until 13 June 2013. Mr Mander submitted, however, that, if it had been known about, there is no reason to suppose that Mr Behrens would not have made the concession that he did. The Board is unable to accept that submission. The identification of the specimen from Mr Lundy's shirt as his wife's CNS tissue was of overwhelming significance. Here was clear evidence of a neuropathologist saying, in effect, that it was impossible to identify the material as CNS tissue; that the cells had degenerated badly; and that Mr Lundy should not be convicted of murder on the strength of this evidence. Mr Behrens knew that, at one stage certainly, Professor Vanezis had considered that a report from Professor Graham, a neuropathologist, was required. He also knew, before Mr Lundy's trial began, that Professor Graham had not seen the slide or reported. It is inconceivable that Mr Behrens, if he had seen what Dr Teoh had said, would not have recognised the need to get Professor Graham or some other, suitably qualified, neuropathologist involved. If Dr Teoh considered that the cells had degenerated badly, there was every prospect that another neuropathologist might express the same opinion. At the very least, it would have alerted defence counsel to the need to investigate the possibility of presenting a direct challenge to Dr Miller's claim that sufficient of the specimen had not degenerated to allow it to be identified as CNS tissue.

132. The appellant drew attention to further material that had not been disclosed before the trial. Between January and April 2001 Detective Sergeant Grantham had been in contact with a Dr David Doyle, head of department of neuropathology in the Southern General Hospital NHS Trust in Glasgow. Dr Doyle was consulted about the work of Dr Miller. He said that he would have no difficulty in accepting Dr Miller's interpretation but that he would have added to it. He described the further work that he would have undertaken in the following paragraphs of a letter to the detective sergeant on 12 April 2001:

“Where I would have added to the work would have been in ensuring that the dimensions of recognisable structures confirm to those of brain structures e.g. nerve cells, cell nuclei or nucleoli, and cell processes of whatever type. I should also have set up control material such as other human brain, in similar amounts, on similar fabric. It would be unlikely that results would conflict with those already obtained. If there is sufficient tissue, sex characterisation might be possible on routinely stained sections.

I think, if I were a defender, I would like to know that the same results could have been achieved in different laboratories. Again, I do not expect that there would be any conflict in the results of repeat studies done in a second laboratory but, when a novel approach is taken, corroboration may be thought desirable. If it were thought necessary, independent assessment could be taken but, when a novel approach is taken corroboration may be thought desirable. If it were thought necessary, independent assessment could be done for you in this laboratory, using the paraffin wax blocked material you have.”

133. In the event, Dr Doyle’s offer was not taken up but Mr Hislop argued that this correspondence should have been disclosed. Relevant material in the hands of the prosecution that might undermine the Crown case or assist the defence must be disclosed – see, for instance, *R v Ward* (1993) 96 Cr App Rep 1 and *R v Alibhai and others* [2004] EWCA Crim 681. It is doubtful that a case could be made that the correspondence from Dr Doyle could be said to undermine the Crown case. After all, he stated that he accepted Dr Miller’s interpretation and that he fully expected the further verifying measures which he had mooted to support the findings that Dr Miller had made. Likewise, it is at least questionable that the suggestions which Dr Doyle made could be said to assist the defence. It may well be that they would have prompted the defence to make further inquiries which might lead to helpful material but, in the view of the Board, that falls short of meeting the test for disclosure.

134. The real significance of Dr Doyle’s letter lies in the observation that use of IHC by Dr Miller to establish the nature of the specimen was “a novel approach”. The novelty of the use of IHC in the forensic context is relevant for two reasons. Firstly, it is relevant as to the impact that new evidence, challenging the validity of its use in a criminal trial without having been subjected to laboratory or empirical testing, has on the safety of the conviction. Secondly, it raises questions about the admissibility of the evidence.

135. Detective Sergeant Grantham was also in correspondence with a Dr Rodriguez, a pathologist in the United States Armed Forces Institute of Pathology. In a letter dated 18 January 2001, Dr Rodriguez said this:

“The suggested procedures you listed are not feasible for several reasons. (A) rinsing the fabric may or may not produce a few single cells, even if a yield of a few cells was accomplished the dehydration of the degraded cellular product would be unsuitable for specific neural cellular staining. (B) paraffin embedding of the fabric followed by slicing to yield cells suitable for staining and identification has been attempted by our labs in the past with negative results in reference to limited stains. As for the procedure (C) conducting study of the DNA molecular structure in reference to primers present in neural cells — it is highly doubtful that the shirt stains contains enough material for the specific examination, secondly primer studies and analysis conducted by our institute which is strictly research in nature, have dealt with organ material other than neural tissue”

136. Again, the Board is doubtful that this statement qualifies as material which requires to be disclosed. It was an explanation of why Dr Rodriguez felt that he was not able to carry out the investigations that Detective Sergeant Grantham had requested. It may be that, if the defence had seen this letter, it might have sparked inquiries that could ultimately have assisted the defence but, again, this does not meet the requirements for disclosure. But Dr Rodriguez’s letter, albeit to a lesser extent than that from Dr Doyle, contributes to the assessment of the potential impact of the evidence which is now available on the purported identification of the stain on Mr Lundy’s shirt.

137. At a minimum, that evidence raises questions about the use of IHC in the forensic setting of a criminal trial. Its widespread and successful use as a diagnostic tool is undisputed but its acceptance as a means of establishing a scientific proposition as an element of proof of guilt remains untested by any experimental or empirical means. In *Blake v Cell Tech International Inc* (2009) 228 Ore App 388, the Court of Appeals of Oregon upheld a decision of a trial judge refusing to admit evidence about the use of IHC to detect microcystin toxins in a deceased’s liver and kidneys. In its judgment the court accepted that novelty does not make scientific evidence automatically inadmissible. But it found that while IHC was generally accepted in some contexts, it had not been demonstrated that it enjoyed the same level of acceptance in the testing for microcystins in human liver tissue. There was no known error rate in the tests and there were no peer-reviewed publications regarding IHC testing of human liver tissues for microcystins by which the accuracy of the tests could be assessed. Test results could not be subjected to confirmation by other forms of scientifically acknowledged tests for liver toxins. Similar arguments could be made in relation to the admissibility of Dr Miller’s evidence in the present case. While these might not avail as a basis for excluding the evidence of Dr Miller, they certainly sound on the question of what impact the new evidence might have on the safety of the appellant’s conviction.

138. In *R v J-L J* [2000] 2 SCR 600 the Canadian Supreme Court endorsed the test formulated by the United States Supreme Court dealing with the approach to be taken to novel scientific theory or technique. At para 33 Binnie J referred approvingly to a number of factors which the US Supreme Court had listed in *Daubert v Merrell Dow Pharmaceuticals Inc* 509 U. S. 579 (1993) that could be helpful in evaluating the soundness of novel science. These were:

“(1) whether the theory or technique can be and has been tested:

Scientific methodology today is based on generating hypotheses and testing them to see if they can be falsified; indeed, this methodology is what distinguishes science from other fields of human inquiry.

(2) whether the theory or technique has been subjected to peer review and publication:

[S]ubmission to the scrutiny of the scientific community is a component of “good science,” in part because it increases the likelihood that substantive flaws in methodology will be detected.

(3) the known or potential rate of error or the existence of standards; and,

(4) whether the theory or technique used has been generally accepted”

139. The Board considers that this list provides a useful template for the examination of the issue whether evidence based on a novel technique such as IHC (novel, at least, in the forensic setting of a criminal trial) should be admissible. But the debate as to whether the listed factors should operate to render inadmissible such evidence has not been engaged – at least, not to the extent that it can be resolved. For present purposes, it is sufficient to say that the need for such a debate signifies the impact that it might well have on an assessment of whether there has been a miscarriage of justice and an unsafe conviction. For this reason alone, the Board considers that the evidence of the consultants who have provided affidavits for the appellant on the issue of the identification of the stain on Mr Lundy’s shirt should be admitted.

140. There are, of course, a number of other compelling reasons to admit the evidence. There is now a real and active dispute as to whether the variation of staining found on Dr Miller’s slides is indicative of a false result or whether this can

be dismissed as a result to be anticipated and one which does not derogate from the validity of the conclusions that were reached on those slides which appear to show good preservation of the sample. There is sharp disagreement between the experts on whether the samples on the ESR slide and Dr Miller's slides were well preserved and whether glial cells and blood cells are detectable on the ESR slide. And there is the critically important issue as to whether the specimen taken from the shirt was necrotic or was capable of histological and immunohistochemical analysis and, on that account, sufficiently preserved by rapid fixing. All of these issues, if resolved in the appellant's favour, have the potential to strike at the very heart of the case against him. For that reason alone, the evidence must be admitted.

(c) the computer issue

141. If the computer in the Lundy home was switched off at 10.52pm on 29 August 2000, this is, at least potentially, an important pointer towards Mr Lundy's innocence. On the available evidence he could not have switched off the computer at that time. The new evidence from Mr Chappell and Mr Watt, if accepted, establishes that the KAK virus was to blame for the disordering of the registry files. That evidence would disprove the suggestion that Mr Lundy had been experimenting with the time and date controls. If Mr Chappell's evidence was accepted, while use of a floppy disk to change the controls would not register on the hard drive, the fact that a floppy disk had been used for some purpose would. In these circumstances the only means of manipulating the time would be by means of a highly sophisticated technique which many computer experts are unaware of.

142. It was essential to the Crown case that an explanation for the time of closing the computer be given. Absent such an explanation, the possibility of Mrs Lundy being alive at 10.52pm could not be eliminated. And if that possibility remained, it was completely at odds with the central prosecution case against Mr Lundy. The new evidence, if accepted, directly challenges the plausibility of that case. It has an obvious and significant potential impact on the safety of the conviction and the possibility of a miscarriage of justice. It is in the interests of justice that it be admitted.

The effect of the new evidence on the safety of the conviction and the possibility of a miscarriage of justice

143. In *Bain* at para 24 the New Zealand Court of Appeal expressed the test to be applied in determining the effect of new evidence in these terms:

“If [the further evidence] does qualify [for admission] the Court then moves to the next stage of the inquiry, which is whether its existence

demonstrates there has been a miscarriage of justice in the sense of there being a real risk that a miscarriage of justice has occurred on account of the new evidence not being before the jury which convicted the appellant. Such real risk will exist if, as it is put in the cases, the new evidence, when considered alongside the evidence given at the trial, might reasonably have led the jury to return a verdict of not guilty”

144. As the Board pointed out in its judgment on the appeal in that case (*Bain v R* [2007] UKPC 33; (2007) 23 CRNZ 71) this formulation differed somewhat from English authorities such as *Stafford v DPP* [1974] AC 878 and *R v Pendleton* [2002] 1 WLR 72 in its emphasis on what the actual trial jury might have decided had it had the opportunity to consider the fresh evidence. In *Pendleton* Lord Bingham had dealt with this question at para 19 of his speech where he said:

“[The House of Lords] in *Stafford* were right to reject the submission of counsel that the Court of Appeal had asked the wrong question by taking as the test the effect of the fresh evidence on their minds and not the effect that that evidence would have had on the mind of the jury ([1974] AC 878 at 880). It would, as the House pointed out, be anomalous for the court to say that the evidence raised no doubt whatever in their minds but might have raised a reasonable doubt in the minds of the jury. I am not persuaded that the House laid down any incorrect principle in *Stafford*, so long as the Court of Appeal bears very clearly in mind that the question for its consideration is whether the conviction is safe and not whether the accused is guilty. But the test advocated by counsel in *Stafford* and by Mr Mansfield in this appeal does have a dual virtue to which the speeches I have quoted perhaps gave somewhat inadequate recognition. First, it reminds the Court of Appeal that it is not and should never become the primary decision-maker. Secondly, it reminds the Court of Appeal that it has an imperfect and incomplete understanding of the full processes which led the jury to convict. The Court of Appeal can make its assessment of the fresh evidence it has heard, but save in a clear case it is at a disadvantage in seeking to relate that evidence to the rest of the evidence which the jury heard. For these reasons it will usually be wise for the Court of Appeal, in a case of any difficulty, to test their own provisional view by asking whether the evidence, if given at the trial, might reasonably have affected the decision of the trial jury to convict. If it might, the conviction must be thought to be unsafe.”

145. That the primary responsibility for deciding what effect the new material has on the safety of the conviction rests with the appellate court was also clear in the opinion of the Board in *Dial and another v State of Trinidad and Tobago* [2005] 1

WLR 1660. At paras 31 and 32, Lord Brown, delivering the opinion of the majority of the Board, said:

“31 In the Board's view the law is now clearly established and can be simply stated as follows. Where fresh evidence is adduced on a criminal appeal it is for the Court of Appeal, assuming always that it accepts it, to evaluate its importance in the context of the remainder of the evidence in the case. If the court concludes that the fresh evidence raises no reasonable doubt as to the guilt of the accused it will dismiss the appeal. The primary question is for the court itself and is not what effect the fresh evidence would have had on the mind of the jury. That said, if the court regards the case as a difficult one, it may find it helpful to test its view "by asking whether the evidence, if given at the trial, might reasonably have affected the decision of the trial jury to convict": *R v Pendleton* [2002] 1 WLR 72 , 83, para 19. The guiding principle nevertheless remains that stated by Viscount Dilhorne in *Stafford's* case [1974] AC 878, 906, and affirmed by the House in *R v Pendleton*:

"While ... the Court of Appeal and this House may find it a convenient approach to consider what a jury might have done if they had heard the fresh evidence, the ultimate responsibility rests with them and them alone for deciding the question [whether or not the verdict is unsafe]."

32 That is the principle correctly and consistently applied nowadays by the criminal division of the Court of Appeal in England-see, for example, *R v Hakala* [2002] EWCA Crim 730, *R v Hanratty, decd* [2002] 3 All ER 534 and *R v Ishtiaq Ahmed* [2002] EWCA Crim 2781 . It was neatly expressed by Judge LJ in *R v Hakala*, at para 11, thus:

"However the safety of the appellant's conviction is examined, the essential question, and ultimately the only question for this court, is whether, in the light of the fresh evidence, the convictions are unsafe.""

146. In *McInnes v Lord Advocate* [2010] UKSC 7, at para 37 Lord Brown reaffirmed the *Pendleton* test and in *Bonnett Taylor v R* [2013] UKPC 8 the approach in *Pendleton* received continued endorsement – see paras 41 and 42.

147. The approach of Lord Bingham in *Pendleton* emphasises the need for an appellate court to recognise the primacy of the jury's role in deciding whether an accused should be found guilty while deprecating speculative assessment by that court of the degree to which new evidence would have affected the minds of the jurors. The essential question is whether the evidence *might reasonably have affected* the

outcome. As the Board said in *Bain* at para 115, “the issue is not whether there is or was evidence on which a jury could reasonably convict but whether there is or was evidence on which it might reasonably decline to do so...” This carries echoes of what Lord Bingham had said in *Graham and Others* [1997] 1 Cr App R 302, 308:

“...if the Court is satisfied, despite any misdirection of law or any irregularity in the conduct of the trial or any fresh evidence, that the conviction is safe, the Court will dismiss the appeal. But if, for whatever reason, the Court concludes that the appellant was wrongly convicted of the offence charged, or is left in doubt whether the appellant was rightly convicted or not, then it must of necessity consider the conviction unsafe”

148. This is also in accord with the approach adopted by Tipping J in *R v Sungsuwan* [2006] 1 NZLR 730 where he said at para 110:

“[110] . . . Ordinarily two things must be shown. First, something must have gone wrong with the trial or in some other relevant way. Secondly, what has gone wrong must have led to a real risk of an unsafe verdict. That real risk arises if there is a reasonable possibility that a not guilty (or a more favourable) verdict might have been delivered if nothing had gone wrong. It is, of course, trite law that an appellant does not have to establish a miscarriage in the sense that the verdict actually is unsafe. The presence of a real risk that this is so will suffice”

149. As Lord Bingham observed in *Bain*, the Court of Appeal differed from the English and Australian authorities as to the way in which an appellate court should approach its assessment of whether there was a miscarriage of justice. That difference ended with the decision of the Supreme Court in *R v Matenga* [2009] 3 NZLR 145. In that case the Supreme Court followed much the same approach as had been advocated by Lord Bingham in *Pendleton*, although it based the change of course on the decision of the High Court of Australia in *Weiss v R* (2005) 224 CLR 300. The judgment in *Matenga* referred approvingly to the way in which the High Court had formulated the test. It was concluded that the general approach followed by the High Court in Australia in *Weiss* should be followed in New Zealand. That approach was described by Blanchard J in para 24 as follows:

“The High Court said that the task was not to be undertaken by attempting to predict what a jury would or might do. The appellate court must itself decide whether a substantial miscarriage of justice had actually occurred. That was an objective task not materially different from other appellate tasks. It was to be performed with whatever are the

advantages and disadvantages of deciding an appeal on the record of the trial; it was not an exercise in speculation or prediction. The standard of proof to be applied was the criminal standard of guilt beyond reasonable doubt. Reference to the jury was liable to distract attention from the statutory task by suggesting that the appeal court was to do other than decide for itself whether a substantial miscarriage of justice had actually occurred.”

150. In light of these authorities, the Board is satisfied that the proper test to be applied by an appellate court in deciding whether a verdict is unsafe or a miscarriage of justice has occurred, where new evidence has been presented, is whether that evidence might reasonably have led to an acquittal. This is in accord with the approach of the New Zealand Supreme Court in *Matenga* where the question for the appellate court was whether the altered circumstances, as revealed on appeal, were capable of affecting the verdict. It is, of course, important to note that the Supreme Court did not follow the High Court of Australia in *Weiss* on the particular point that any departure from applicable rules of evidence or procedure would amount to a miscarriage of justice. To amount to a miscarriage of justice the Supreme Court of New Zealand considered that the error in the earlier proceedings must have been capable of affecting the verdict. The Board detects no difference in this approach from its formulation of the test as being whether the fresh evidence (or the error at trial) might reasonably have led to an acquittal

151. Applying this test to the present case, the Board has concluded, subject to consideration of the proviso (which will be dealt with below), that the verdict is unsafe.. The evidence of the identification of the specimen taken from Mr Lundy’s shirt as his wife’s CNS tissue was, as the Court of Appeal described it, the most cogent piece of evidence in support of the Crown’s case. Substantial questions about the validity of that evidence have been raised by the fresh material. The Crown’s positive case was that the murders had been committed between 7 and 7.15pm on 29 August 2000. The new evidence on this subject, if it is accepted, eradicates scientific support for the claim that this was the time of the death of the victims. Finally, the computer evidence raises the possibility of Mrs Lundy being alive at 10.52pm. Clearly it is evidence on which a jury might reasonably decline to convict.

The proviso

152. In its material parts section 385(1)(c) of the Crimes Act 1961 provides:

“(1) On any appeal against conviction the Court of Appeal shall allow the appeal if it is of opinion –... (c) That on any ground there was a miscarriage of justice.”

153. The subsection contains a proviso in the following terms:

“Provided that the Court of Appeal may, notwithstanding that it is of opinion that the point raised in the appeal might be decided in favour of the appellant, dismiss the appeal if it considers that no substantial miscarriage of justice has actually occurred.”

154. In support of its argument that the proviso should be applied by the Board, the respondent drew attention to a number of features of the case against the appellant, other than those which were involved in the application to receive fresh evidence. These, it was suggested, were capable of establishing his guilt. Tape lifts from Mr Lundy’s polo shirt established the probable presence of blood. Three particles were cut from the tape lifts and subsequent testing showed that DNA within the particles came from Amber. But Professor Whitwell’s opinion that the presence of blood flakes on clothing of members of the same family, if the parties live together, is not at all unusual was not challenged by the respondent and the Board does not consider that any significance can be attached to this evidence.

155. There was evidence that the break-in had been staged. Three areas of smeared blood that almost certainly came from Christine Lundy were found on the outside of the window which had been forced and on the underside of the leading edge of the window frame. This indicates that the window was forced after the murders took place. This certainly throws suspicion on the appellant but alone could not begin to constitute proof of his guilt. Likewise, the finding that paint flakes associated with the deceased’s wounds forensically matched unique paint markings on the appellant’s tools.

156. Evidence was given that, on the appellant’s account of having filled his car with petrol and his driving to various sales calls on 29/30 August 2000, he should have had thirty litres more in his petrol tank than was actually found. It was claimed that the appellant’s suggestion that he might have been the victim of petrol theft was implausible for a number of reasons, not least because the car was fitted with an anti-siphoning device. Again, while this is a cause for suspicion it falls very far short of proof of guilt, even when taken in combination with other factors such as the staged break-in and the paint flakes.

157. A bracelet was found on the front passenger seat of the appellant’s car. When asked about this at interview, the appellant said that it was an old piece belonging to his wife. It is unlikely that this item did belong to Christine Lundy as it was probably too small for her to wear in comfort. It was suggested that it had been taken by the appellant when he removed the jewellery box. (There was evidence that Amber kept some items of jewellery in her mother’s jewellery box). The appellant’s attempt to

explain its presence in the car that Christine had dropped it when they were at a social function was not believable, the Crown suggested. Again, this evidence is cause for suspicion but no more, even when considered with the other features to which the respondent has drawn attention.

158. A witness, Margaret Dance, who lived in the appellant's neighbourhood, saw a person whose general appearance might be said to be similar to the appellant's running from the direction of Karamea Crescent at about 7.15pm on 29 August. The details she provided as to time and place where the observation took place, the demeanour, clothing and footwear of the individual, and the appearance of a nearby car all pointed clearly to the appellant, the Crown claimed. It was accepted that there were some eccentricities in Mrs Dance's evidence and the description that she gave, while graphic, was general in nature. The Board does not consider that it contributes to any significant extent to the case against the appellant.

159. The Board has not sought to outline all of the features that the Crown has raised in support of its claim that this is an appropriate case for the application of the proviso. All of these have been carefully considered. But the Board is fully satisfied that this is not a case in which the proviso should be applied.

160. The present position about the application of the proviso in New Zealand has now been authoritatively stated in *Matenga*. At para 31, Blanchard J said:

“...having identified a true miscarriage, that is, something which has gone wrong and which was *capable* of affecting the result of the trial, the task of the Court of Appeal under the proviso is then to consider whether that potentially adverse effect on the result may *actually*, that is, in reality, have occurred? The Court may exercise its discretion to dismiss the appeal only if, having reviewed all the admissible evidence, it considers that, notwithstanding there has been a miscarriage, the guilty verdict was inevitable, in the sense of being the only reasonably possible verdict, on that evidence. Importantly, the Court should not apply the proviso simply because it considers there was enough evidence to enable a reasonable jury to convict. In order to come to the view that the verdict of guilty was inevitable the Court must itself feel sure of the guilt of the accused. ...”

161. This approach accords with that which the Board has consistently adopted in deciding whether the proviso should be applied. A summary of the governing principles is most conveniently to be found in the judgment of Lord Hope in *Stafford v The State* [1999] 1 WLR 2026 where he said at 2029:

“The test which must be applied to the application of the proviso is whether, if the jury had been properly directed, they would inevitably have come to the same conclusion upon a review of all the evidence: see *Woolmington v. Director of Public Prosecutions* [1935] A.C 462, 482-83, *per* Viscount Sankey L.C in *Stirland v. Director of Public Prosecutions* [1944] A.C 315, 321 Viscount Simon L.C said that the provision assumed: "a situation where a reasonable jury, after being properly directed, would, on the evidence properly admissible, without doubt convict." As he explained later on the same page, where the verdict is criticised on the ground that the jury were permitted to consider inadmissible evidence, the question is whether no reasonable jury, after a proper summing up, could have failed to convict the appellant on the rest of the evidence to which no objection could be taken on the ground of its inadmissibility. Where the verdict is criticised on the ground of a misdirection such as that in the present case, and no question has been raised about the admission of inadmissible evidence, the application of the proviso will depend upon an examination of the whole of the facts which were before the jury in the evidence.”

162. It is, of course, clear that references by Viscount Simon in *Stirland* must be read in light of the current understanding that it is the appellate court’s own judgment on the question of the safety of the conviction that is critical. Expressed simply, before the proviso could be applied, the Board would have to feel sure of the appellant’s guilt and be satisfied that a guilty verdict was inevitable. After careful consideration of all the matters which have been canvassed on behalf of the respondent, the Board could not be so satisfied.

Miscellaneous

163. Apart from the principal grounds of appeal advanced, the appellant made a number of other submissions on sundry issues including the failure of the police to preserve evidence about the use of a laptop in the Lundy home or to clone its contents. It was also argued that the trial judge had failed to give proper directions about the evidence given by Margaret Dance. The Board is satisfied that there is nothing in either of these grounds. The laptop could have been examined by Mr Peacock or another suitably qualified expert. And the directions given by Ellis J, although succinct, were on point and properly reminded the jury that eye witnesses can be mistaken, even when they appear to be convincing. In the Board’s view no more elaborate direction as to identification was required. After all, Mrs Dance did not purport to identify the appellant. She had simply described the appearance of an individual which might have matched that of Mr Lundy.

Disposal

164. The Board gave anxious consideration to whether the appeal should be remitted to the Court of Appeal. That court could have heard evidence from the various experts and sought to reach conclusions on the matters in dispute. The Board has decided, however, that this would not be appropriate. The divisions between the experts are so profound, they range over so many areas and they relate to matters which are so central to the guilt or innocence of the appellant, that the Board has concluded that they may only properly be resolved by the triers of fact in a trial where a suitable and searching inquiry into all these areas of dispute may take place.

165. The Board will therefore humbly advise Her Majesty that the appeal should be allowed, that the convictions should be quashed and that the appellant should stand trial again on the charges of murder as soon as that can be conveniently arranged. The appellant should remain in custody pending retrial, subject, of course, to any decision that the High Court of New Zealand might make on an application for bail.