

SUPREME COURT OF QUEENSLAND

CITATION: *R v Baxter* [2021] QSC 70

PARTIES: **R**
v
BAXTER, Nicholas Aaron
(Defendant)

FILE NO/S: Indictment No 21 of 2021 (was 74 of 2015)

DIVISION: Trial Division

PROCEEDING: Trial (Judge alone)

ORIGINATING COURT: Supreme Court at Townsville

DELIVERED ON: 6 April 2021

DELIVERED AT: Townsville

HEARING DATE: 15-19, 23 and 26 February and 1, 2 and 18 March 2021

JUDGE: North J

VERDICT: **Not Guilty**

CATCHWORDS: CRIMINAL LAW – PARTICULAR OFFENCES – OFFENCES AGAINST THE PERSON – HOMICIDE – MANSLAUGHTER – VERDICT – where the accused was charged on indictment with manslaughter – where the accused pleaded not guilty – where the deceased experienced cardiorespiratory collapse and brain death – whether the accused caused the death of the deceased – whether the accused is guilty of manslaughter.

PARTICULAR OFFENCES – OFFENCES AGAINST THE PERSON – HOMICIDE – MANSLAUGHTER – VERDICT – EVIDENCE – EXPERT EVIDENCE

Criminal Code Act 1899 (Qld), s 23(1)(b), s 291, s 293, s 300, s 301, s 614 s 615

Barca v The Queen (1975) 133 CLR 82, cited

Golden Eagle International Trading Pty Ltd v Zhang (2007) CLR 498, applied

Liberato v the Queen (1985) 159 CLR 507, followed

Omychund v Barker (1744) 26 ER 15, considered

Peacock v The King (1911) 13 CLR 619, cited

R v Baden-Clay (2016) 258 CLR 308, cited

R v Pentland [2020] QSC 231, followed

Shepherd v The Queen (1990) 170 CLR 573, cited

COUNSEL: Mr N Rees for the Crown
Mr L Crowley QC and with him Mr MJ Jackson for the Defendant

SOLICITORS: Office of the Director of Public Prosecutions for the Crown
Michael Bowe Solicitor for the Defendant

1. The defendant was charged on indictment with the murder of his infant son on or about the sixth day of November 2011 at Townsville.¹ Following a trial before a judge with jury at Townsville in November 2017 the defendant was found not guilty of murder but guilty of manslaughter. He successfully appealed his conviction, the conviction was quashed and a re-trial ordered.² Because of his acquittal on the count of murder any re-trial could concern only a charge of manslaughter. On the first day of the trial a new indictment alleging manslaughter³ was presented. The defendant was arraigned,⁴ he pleaded not guilty and he was discharged under the former indictment.
2. On the 22 day of January 2021 I ordered pursuant to s 614 and s 615 of the *Criminal Code* that the defendant be tried by a judge sitting without a jury. Section 615C requires that I record:
 - (a) the principles of law that I have applied; and
 - (b) the findings of fact on which I have relied.

The offence of manslaughter

3. Before the defendant can be found guilty of the charge of manslaughter I must be satisfied beyond reasonable doubt of three things:
 - (a) that Matthew Riley Baxter is dead;

¹ Townsville Indictment No 74 of 2015.

² *R v Baxter* [2019] QCA 87.

³ “Unlawful killing”, consider s 300 and s 303(1) of the *Criminal Code*.

⁴ Indictment No 21 of 2021.

- (b) that the defendant killed him, that is, he caused his death;⁵
- (c) that the killing was unlawful, that is, not authorised or justified or excused by law.⁶

General principles of law

- 4. The Crown case is circumstantial.
- 5. Various general principles which apply to all criminal prosecutions must be applied by me. In addition, there are principles which apply in a case where the prosecution substantially relies upon circumstantial evidence. I must have regard to these principles to the extent that the prosecution relies upon circumstantial evidence, rather than admissions, to prove a fact.
- 6. Relevant principles were conveniently stated by Martin J in *R v Pentland*.⁷ I reproduce them and have applied them:⁸

“[12] The prosecution has the onus of establishing the offence charged beyond reasonable doubt. There is no onus on the defendant.

[13] In arriving at a verdict I must act impartially and dispassionately and only on the evidence received at the trial.

[14] The issues that exist must be resolved by taking into account all of the evidence, but that does not mean that I have to resolve all of the questions or inconsistencies which may have been raised by the evidence or which may arise about the facts.

[15] The evidence which I accept and that which I reject may be based on a number of things, including what a witness had to say in the witness box, the manner in which the witness gave evidence, the general impression which he or she made when giving evidence, statements which a witness may have made at an earlier time, such as in a statement to the police or at the committal, and my assessment of other evidence including documents and other material.

[16] It is for me to decide whether I accept the whole of what a witness says, or only part of it, or none of it. The fact that I might not accept a portion of the evidence of a witness does not mean that I must necessarily reject the whole of that witness’s evidence. I may accept parts of it if I think it is worthy of acceptance.

⁵ Consider s 293 of the *Criminal Code*.

⁶ Consider s 291 of the *Criminal Code*.

⁷ [2020] QSC 231 at [12] – [24].

⁸ Noting [19] of Martin J’s reasons which has some highlighting in the circumstance that while the defendant did not give evidence he called witnesses.

- [17] In drawing any inferences, I must be satisfied that they are reasonable ones to draw from the facts that I find have been established by the evidence. I must not engage in speculation or conjecture to fill in any gaps in the evidence but it is up to me to decide whether I accept particular evidence and if I do, what weight or significance, it should have.
- [18] I also bear in mind that there is a difference between honesty and reliability. A person might honestly believe what he or she says about what he or she heard or saw and yet not be reliable in recollection, perhaps because of errors in observation, or of recall, or because of an inability to describe what they heard or saw. In this case, the passage of time between the events surrounding the charge and the giving of evidence in this trial is of particular importance.
- [19] The defendant has not given **or called** evidence. That is his right. He is not bound to do so. The burden on the prosecution does not change and the fact that the defendant did not give evidence is not evidence against him. It proves nothing at all.⁹

A circumstantial case – the principles

- [20] When the case against an accused person rests substantially upon circumstantial evidence a verdict of guilty cannot be returned unless the circumstances are such as to be inconsistent with any reasonable hypothesis other than the guilt of the accused.¹⁰
- [21] To be satisfied beyond reasonable doubt of the guilt of the defendant it is necessary not only that guilt should be a rational inference, but also that it should be the only rational inference that the circumstances would enable to be drawn.¹¹
- [22] For an inference to be reasonable, it must rest upon something more than mere conjecture. The bare possibility of innocence should not prevent a finding of guilt, if the inference of guilt is the only inference open to a reasonable person upon a consideration of all the facts in evidence.¹²
- [23] Further in considering a circumstantial case, all of the circumstances established by the evidence are to be considered and weighed in deciding whether there is an inference consistent with innocence reasonably open on the evidence.¹³
- [24] The evidence is not to be looked at in a piecemeal fashion.¹⁴ But, a single circumstance inconsistent with a conclusion of guilt may be of

⁹ This requires some qualification. The defendant did not give evidence but he did call evidence. This will be discussed in [7] below.

¹⁰ *Peacock v The King* (1911) 13 CLR 619 at 634 per Griffith CJ quoted in *Barca v The Queen* (1975) 133 CLR 82.

¹¹ *Shepherd v The Queen* (1990) 170 CLR 573 at 578.

¹² *R v Baden-Clay* (2016) 258 CLR 308 at 324; *Peacock v The King* (1911) 13 CLR 619 at 661 quoted in *Barca v The Queen* (1975) 133 CLR 82 at 104.

¹³ *R v Baden-Clay* (2016) 258 CLR 308 at 324 quoting *R v Hillier* (2007) 228 CLR 618 at 637.

¹⁴ *R v Baden-Clay* (2016) 258 CLR 308 at 324 citing *R v Hillier* (2007) 228 CLR 618 at 638.

more importance than all the rest inasmuch as it destroys the hypothesis of guilt.¹⁵¹⁶

7. The statement made concerning the circumstance that the defendant did not give evidence requires some slight modification and clarification.¹⁷ That follows because although he did not give evidence the defendant did call evidence in his defence¹⁸ and he tendered evidence.¹⁹ I remind myself that at all times the onus rests on the prosecution to prove the guilt of the defendant beyond reasonable doubt. What I adopted from Martin J in the passage concerning the fact that the defendant did not give evidence remains the same. In submissions counsel for the defendant submitted that a “Liberato” self-direction²⁰ may be called for.²¹
8. Consistent with the onus of proof beyond reasonable doubt remaining on the prosecution I accept that even if I were to reject the evidence of the witnesses called for the defendant it does not follow that the contradictory expert evidence called by the prosecution should be accepted as proof of the guilt of the defendant. In such a case I remain obliged to consider all the evidence and whether, based upon so much of it that I do accept, I am satisfied of the defendant’s guilt beyond reasonable doubt.

Other Matters

9. There are some other principles or matters of law relevant to this trial that I must record.
10. This is a re-trial and I presided at the earlier trial. I noted above that I must act only on the evidence received at this trial. This I have done. In my deliberations upon the issues or matters I must consider in reaching my verdict I have had regard only to the evidence received at this trial. If I had any concern about that I would have recused myself.

¹⁵ *Peacock v The King* (1911) 13 CLR 619 at 634 per Griffith CJ.

¹⁶ See further *R v Carmichael* [2020] QSC 326 at [8].

¹⁷ See para [6] above and [19] quoted from Martin J’s reasons in *Pentland*.

¹⁸ Dr Mack and Dr Auer.

¹⁹ See Ex 32.

²⁰ *Liberato v The Queen* (1985) 159 CLR 507. See further *De Silva v The Queen* (2019) 94 ALJR 100.

²¹ See defendant’s written closing submissions at para [28].

11. On 10 February 2021 I made orders permitting the Crown to call some experts to give evidence in person. Other experts gave evidence by audio visual link. Some lay witnesses, by leave, gave evidence by audio visual or audio link. Two experts called by the defendant gave evidence by audio visual link.²² The circumstance that any witness, expert or lay, gave evidence by audio or audio visual link (and expressly in this case of experts who gave evidence by audio or audio visual link) has not led me to give that evidence any more or less weight nor to draw any adverse inference against any party.
12. I have mentioned proof beyond reasonable doubt. I am reminded that it is the highest standard of proof known to the law in contrast with the civil standard of proof on the balance of probability. The criminal standard of proof beyond reasonable doubt is much higher than the civil standard.

Expert Evidence

13. A large number of expert witnesses gave evidence or their evidence was tendered into evidence.²³ The evidence came from doctors, nurses and paramedics and a scientist. An expert is permitted to give opinion evidence upon matters within that expert's specialised area of study and expertise. But expert evidence does not have to be accepted, an opinion may be based upon an incorrect or unestablished factual assumption. One expert's evidence may be contradicted by the evidence of another and better qualified expert.
14. In submissions counsel for the defendant made the following submissions:²⁴
 - “13. Expert evidence must be presented in a form which makes it possible for the trial judge to determine whether the opinion was ‘wholly or substantially’ based on ‘specialised knowledge’. In assessing the admissibility of the evidence, the judge must ascertain and define with some precision the scope, and the limits, of the witness's ‘specialised knowledge’. This must be so, given that the second condition of admissibility requires the opinion to be ‘wholly or substantially based’ on that knowledge.

²² Dr Mack and Dr Auer.

²³ See Ex 32.

²⁴ See defendant's written closing submissions at paras 13, 14 and 15.

14. A failure to demonstrate that an opinion expressed by a witness is based on the witness's 'specialised knowledge based on training, study or experience' is a matter that goes to the admissibility of the evidence, not simply its weight. Whilst one might assume that the opinions expressed are informed in some way, or to some extent, by their qualifications and experience, as Heydon JA (as his Honour then was) explained in *Makita*, without those matters being made explicit, it is not possible to be sure that the opinion is so based.
15. An expert may, within their specialised knowledge, consider whether a hypothesis is consistent with 'known facts', so long as those 'known facts' are established by evidence. If those 'known facts' are not so established then the opinion is an impermissible inference drawn by that expert. The principle about impermissible speculation was stated by Redlich JA (with whom the other members of the Victorian Court of Appeal agreed) in *R v Berry* that:

"... an expert will not ordinarily be permitted to speculate as to inferences when there is no evidence that could support such an inference. Where there is such evidence, the expert may testify that such circumstances are consistent with such an explanation. Thus, an expert may be invited to consider whether a hypothesis is consistent with the known facts, so long as the hypothesis is sought to be drawn from facts which may be established by the evidence and the assessment of such facts is within the witness's expertise."

(footnotes omitted)

The issues in this case

15. Reference was made in [3] above of the elements of manslaughter.
16. The Crown and the defence have agreed upon many matters which became the subject of a set of formal admissions which were tendered pursuant to s 644 of the *Criminal Code*.²⁵
17. The matters admitted between the parties are:

Pre-Birth

- (1) Dr Steve Mokrzecki was Mrs Baxter's obstetrician and gynaecologist. He saw Mrs Baxter on the following dates:
- a. On 19 April 2011, when Mrs Baxter was 16 weeks pregnant and observed no complications;

²⁵ See Ex 1.

- b. On 17 May 2011, when Mrs Baxter was 20 weeks pregnant and noticed that her placenta was quite low;
 - c. On 21 June 2011, when Mrs Baxter was 25 weeks and reviewed her blood tests which showed no abnormality;
 - d. On 19 July 2011, when Mrs Baxter was 28 weeks pregnant and diagnosed Mrs Baxter with gestational diabetes, and referred her to Dr Tan, an endocrinologist;
 - e. On 4 August 2011, when Mrs Baxter was 31 weeks pregnant and discussed her progress;
 - f. On 18 August 2011, saw Mrs Baxter who was 33 weeks pregnant and observed that the placenta was clear of the cervix and provided her with a steroidal injection to treat any complications because of her shortened cervix;
 - g. From 18 August 2011, Dr Mokzrecki saw Mrs Baxter weekly and observed that the growth continued along normal parameters; and
 - h. On 20 September 2011, Dr Mokzrecki observed Mrs Baxter's sugar levels to be erratic, so he arranged for her to be induced the following week.
- (2) Dr Yong Mong Tan, an endocrinologist saw Mrs Baxter on 27 July 2011, and provided her with treatment for the gestational diabetes. He saw Mrs Baxter again on 17 August 2011 and, then, on 1 September 2011 when Mrs Baxter was 35 weeks, and he observed no abnormalities.

The day of birth

- (3) On 24 September 2011 at 6:10pm Matthew Baxter was born.
- (4) Dr Erwin Heymann was the obstetrician who attended upon Mrs Baxter and delivered Matthew. Matthew was born by vacuum extraction.
- (5) Theona Down, was the midwife assisted with the birth of Matthew. She gave Matthew intramuscular vitamin K injection with the consent of Mr and Mrs Baxter.

Post-natal

- (6) On 25 September 2011, Dr William Frischman, a paediatrician, performed a top to toe examination and observed no abnormalities.
- (7) On 26 September 2011, Dr Jennifer Smith, a paediatrician, took over the care of Matthew from Dr Frischmann. She examined Matthew and noted that Matthew was progressing well and observed no abnormalities.
- (8) On 27 September 2011, Ashleigh Bailey, a nurse in the post-natal ward at the Townsville Hospital, examined Matthew and had no concerns with Matthew's weight gain or feeding and observed no injuries. She noted that Mr Baxter was holding Matthew throughout and cuddling and doing baby talk with Matthew.
- (9) On 28 September 2011, Mrs Baxter and Matthew were discharged from hospital. At the time of discharge, Dr Jennifer Smith noted that Matthew was small but

within normal range and that there were no matters observed that caused any concern and that he was in good health at the time of the discharge.

- (10) On 28 September 2011, Dr Harry Stalewski, a paediatrician and neurologist confirmed that he performed a circumcision on Matthew and reported that there was no abnormal bleeding.
- (11) On 3 October 2011, Nina Fairley, a nurse employed by Child Health, examined Matthew at the Mater Hospital post-natal clinic, with both Mr and Mrs Baxter present. She observed Matthew to be a normal healthy baby and that Mr Baxter was holding Matthew and provided information to her about his progress.
- (12) On 8 October 2011 at 7:26pm, Maureen Vickary, a nurse at 13 Health, received a telephone call from Mrs Baxter where it was reported that Matthew had vomited with blood in the vomit and sought advice. The 13 Health call was recorded.
- (13) On 10 October 2011, Dr Harry Stalewski reviewed Matthew post circumcision and observed no abnormality.
- (14) On 17 October 2011, Ashleigh Bailey examined Matthew again and had no concerns with Matthew's weight gain or feeding and observed no injuries. She noted that Mr Baxter was holding Matthew throughout and cuddling and doing baby talk with Matthew.
- (15) On 24 October 2011, Carmel Gage, a nurse working in the post-natal clinic at the Mater Hospital, saw Mr and Mrs Baxter. Mrs Baxter raised an issue about passing green frothy stools and about being unsettled. Ms Gage observed no signs of injuries and she recommended Matthew be wrapped up firmly to help him sleep. She advised Mr and Mrs Baxter that she considered the green frothy stools to be an indicator of sugary milk and advised her to stretch the feeds out, but it was otherwise not a concern.
- (16) On 26 October 2011, Mrs Baxter took Matthew to see their general practitioner Dr Prashanta Mitra, and Mrs Baxter told him that Matthew was having green stools and showed him an example in a nappy. He performed an examination and did not observe any abnormalities.
- (17) The above examinations of Matthew involved only routine external examinations and did not include computed tomography (CT scans), magnetic resonance imaging (MRI) or any other neurological testing.
- (18) On 26 October 2011, Mr Baxter flew to Adelaide for an aviation medical course. He returned on 28 October 2011.
- (19) On 31 October 2011, Carmel Gage saw Mr and Mrs Baxter and Matthew again and was not concerned about Matthew's progress.
- (20) On 23 October 2011, Bree Godfrey, a neighbour of Mr and Mrs Baxter, held a baby shower for Matthew, which Mrs Baxter attended for about an hour and a half. Godfrey observed Matthew to be a normal baby with no apparent marks, and that she understood from what she was told that he was feeding and sleeping well.
- (21) Mark Crocker was Ms Godfrey's partner at the time. He was in the Army with Mr Baxter. He saw Matthew on a number of occasions over the back fence when Matthew was with one or both of the parents. He perceived Matthew to be a normal, healthy baby and to his recollection that Mr Baxter appeared to be a normal, happy father and there was no suggestion that he was not coping.

- (22) Nicola Rothwell was a serving member of the Australian Army. She was the parent of a son born on 5 October and she attended the new baby group classes at Kirwan, with Mr and Mrs Baxter. She observed Mr Baxter with Matthew during classes and recalls Mr and Mrs Baxter mentioned that Matthew was waking up every couple of hours and not sleeping through. She did not observe any injuries and that neither parent mentioned any.
- (23) Fiona Montgomerie was the mother of a daughter born on 2 October 2011. She attended the new baby group classes at Kirwan, with Mr and Mrs Baxter. She could remember discussion about Matthew's feeding, that he was not taking the breast and that Mrs Baxter saying that he was not sleeping well. She noticed that it was Mr Baxter who spent time holding Matthew and looking after him and changing his nappy. She did not see any signs of injury to Matthew.

First Response Witnesses

- (24) On 3 November 2011, Mrs Baxter attended a boat course which commenced at 8am and finished at approximately 1:30-1:45pm and that she attended and officially received her licence at 2:26pm.
- (25) At about 1:34pm on 3 November 2011, Mr Baxter called and spoke to Gayle Barker, a receptionist at the Bluewater Medical Practice. Ms Barker recalls him stating that his baby had woken, and the baby was limp and had a purple rash on his back, and advised him to bring Matthew in as soon as possible. However, after speaking to a nurse at the practice, she rang back and told Mr Baxter he should ring 000.
- (26) At about 1:41pm on 3 November 2011, Mr Baxter made a 000 call. Tiffany Lane was the emergency dispatcher at the Queensland Ambulance Services, who took the emergency call from Mr Baxter. The 000 call was recorded.
- (27) Paramedics Frances O'Meara and Mr John Rathbone were dispatched at about 1:42pm and arrived at 3 Rowley Place at about 1:50pm.
- (28) Paramedics John Suringa and Robert Blackley also attended 3 Rowley Place.
- (29) John Rathbone, the other paramedic in the Ambulance with Frances O'Meara and Matthew, maintained the airway of Matthew and ventilated him while O'Meara was performing CPR on Matthew.
- (30) None of the attending paramedics observed any injuries or marks to Matthew's head, face or body.

Matthew's admission to the Neonatal Intensive Care Ward at the Townsville Hospital

- (31) At about 2:24pm on 3 November 2011, Matthew arrived at the Emergency Department at the Townsville Hospital.
- (32) At about 2:55pm on 3 November 2011, Matthew was stabilised and transferred to the neonatal intensive care ward.

- (33) On 3 November 2011, Lindsay Gilbert-Smith (formerly Nicol) a clinical nurse at the neonatal intensive care unit, who had the care of Matthew. She did not observe any marks or injury on his face, head or body.
- (34) On 3 November 2011, Dr Lisa Edmonds, a senior neonatal registrar, thoroughly examined Matthew and observed two small bruises just below his sternum area which were fingerprint bruises which she interpreted as having been from cardiopulmonary resuscitation (CPR). Dr Edmonds did not otherwise see any other unusual marks on Matthew's head, face or body when he was examined by her.
- (35) On 3 November 2011, it was noted that a chest x-ray showed Matthew had a number of rib fractures dated 7-10 days of age.
- (36) On 5 November 2011, Kimberley McNamara (formerly Soper) was a clinical nurse and team leader in the neonatal intensive care ward. While she did not have specific care of Matthew, she was aware of his presence and condition. During Matthew's admission, she had a conversation with Mr Baxter during which he said words to the effect that the only time that he had been left alone with Matthew was when his wife went to get her boat licence. She also examined and inspected Matthew's body and did not see any evidence or indication of swelling, marks and bruises or abrasions to his body.
- (37) On 5 November 2011, Dr Peter Wallis, was a registrar within the neonatal unit intensive care unit, saw Matthew for about an hour as he took blood for testing.
- (38) On 6 November 2011, at 6:45pm, Dr Peter Wallis turned off Matthew's ventilator.
- (39) On 6 November 2011, at 7:20pm, Dr Peter Wallis examined Matthew and four minutes later at 7:24pm, declared Matthew to be life extinct.
- (40) Dr Wallis did not see an any unusual marks on Matthew's head, face or body at any time.
- (41) On 3, 4 and 5 of November 2011, blood was drawn from Matthew for the purpose of pathological testing.

The transporting of Matthew's brain and the loss of the spinal cord

- (42) Matthew's brain and spinal cord were taken out and fixed into a formalin solution in a pot and wrapped in stuffing in Townsville. Those items were sent to the John Tonge Forensic Centre in Brisbane for the purposes of examination. However, the spinal cord went missing at Scientific Services and the investigation concluded that the spinal cord had been thrown out with those coverings at Scientific Services.

Miscellaneous

- (43) Matthew's medical notes have been provided to the experts in this trial for them to proffer an opinion.
- (44) Extracts from Matthew's medical records have been identified, assembled and annexed to these admissions.

- (45) Transcripts of the evidence given by various witnesses who were called to give evidence at the previous trial of Mr Baxter concerning Mr Baxter's good character and his relationship with Matthew have been identified, assembled and annexed to these admissions. The parties agree that the evidence of these witnesses may be received by the Court at his retrial for the alleged offence of manslaughter.
18. As a result of the admissions and the way in which the case was litigated by the prosecution and the defendant there is one broad issue to be determined; whether the defendant caused the death of his son Matthew.²⁶ It is admitted that Matthew is dead but it remains in issue between the parties whether the defendant did an act or made an omission that caused Matthew's death and, if so, whether the killing was unlawful.²⁷ In this case the defence submits that "accident" under s 23(1)(b) of the *Code* is raised and that the prosecution must negative that beyond reasonable doubt.²⁸

The Evidence

The lay evidence and the evidence of the paramedics

19. **Detective Senior Sergeant Phillip Watts** was attached to the Townsville Child Protection and Investigation Unit at the time of the death of Matthew. He received notification of Matthew's admission to hospital on 4 November 2011 and he attended at the hospital and spoke with Dr Alcock. On 6 November 2011 he became aware that Matthew had passed away and from then an investigation commenced in relation to a suspected child abuse case.
20. On 11 November 2011 he conducted a search of the residence at 3 Rowley Place, Burdell and photographs of the residence were taken.²⁹ As part of his investigation:
- (a) he spoke with Mrs Tenae Baxter and he compiled a document being a call log of phone calls and text messages passing between Mr and Mrs Baxter on 3 November 2011.³⁰ Additionally Detective

²⁶ See s 293 of the *Criminal Code*.

²⁷ See s 300 of the *Criminal Code*.

²⁸ See defendant's written closing submissions MFI L at para 42.

²⁹ Ex 2.

³⁰ Ex 3.

Senior Sergeant Watts arranged for photographs of the infant Matthew to be obtained.³¹ He obtained a recording of a telephone call and conversation on 8 October 2011 between Mr and Mrs Baxter and the nurse at 1300 HEALTH.³²

- (b) He looked into the movements of Mrs Baxter and ascertained that she attended a boat licence course on the morning and early afternoon of 3 November 2011. The course venue was the yacht club at South Townsville.
 - (c) He arranged for statements to be taken from doctors and medical staff such as nurses and paramedics and he arranged to provide copies of the medical notes and statements to Dr Skellern and Dr Gole.
 - (d) He arranged to obtain a recording of the 000 emergency call made by the defendant on the afternoon of 3 November 2011.³³
 - (e) He ascertained that Mr Nicholas Baxter had no previous convictions recorded against him, was not adversely recorded in the Queensland Police Service database and there was no information or record with the Department of Child Safety adverse to Mr Baxter.
21. He confirmed that when the search warrant was executed on 11 November 2011 crime scene officers attended and made a forensic examination of the premises looking for the presence of forensic evidence relevant to the investigation. He confirmed that those investigations turned up nothing. He also ascertained that Mr Nicholas Baxter had travelled to Adelaide for a course relating to his military service. And that he departed Townsville for Adelaide on 26 October 2011 at approximately 11:50am. He was originally booked to return on a flight on 29

³¹ Ex 4.

³² Ex 5 is the recording of the conversation and MFI B is a transcript of the conversation.

³³ Ex 6, MFI C is a transcript of the emergency call.

October 2011 but further inquiries confirmed that he had returned to Townsville on 28 October 2011 arriving at about 10:30pm.

22. **Mrs Tenae Baxter** was called in the prosecution case. She is the wife of Nicholas Baxter. In 2011 she was a member of the Royal Australian Airforce having been a member of the Airforce since 2006. At times she'd been stationed at Amberley and then moved to Pearce in Western Australia and subsequently to Townsville.
23. Mrs Baxter met her husband when they were both serving in Afghanistan. They married on 18 December 2010. At the time of the wedding she was based at Pearce in Western Australia. She applied for a transfer to Townsville so that she could be with her husband. They lived together at 3 Rowley Place, Burdell. Thereafter she fell pregnant and she gave birth to Matthew on 24 September 2011. At the time of the birth of Matthew members of her family visited from Western Australia and stayed for about three weeks.
24. Mrs Baxter was asked about Matthew's sleeping patterns up to the day of his admission to hospital on 3 November 2011. She said that she couldn't "remember him sleeping well" and that he had broken sleep. Matthew was not on any medication but she did give him drops from an over-the-counter mixture called "infant's friend" which was designed to treat symptoms of wind and colic.
25. In order to assist her with the care and management of the infant her husband took long service leave. She described him as an interactive father and when asked what she meant by that she said that "he was loving. He was nurturing. He changed nappies, he bathed him. He comforted him, spent time with him." The defendant would also feed Matthew sometimes with expressed breast milk and sometimes with formula.
26. She gave evidence that she and her husband shared the feeding duties. On one occasion when he was approximately two weeks old it was noticed that there was what appeared to be blood in his vomit. A phone call was made to 1300HEALTH. The call was on 8 October 2011.

27. Mrs Baxter confirmed that on 3 November 2011 she attended a boat licence course which required her to leave at about 7:00am as the course commenced about 8:00am. Matthew was fine prior to her leaving and she did not notice any injuries on him at all. She did recall however taking Matthew for a walk in his pram on the afternoon of 2 November 2011. Matthew seemed to be shaking his head from left to right but it did not cause her any concern. She said that he did not sleep well on the evening of the 2nd and into the morning of the 3rd. Matthew was up most of the night and she said that she predominantly cared for him. Nevertheless he seemed fine when she left, he was in his cot and he looked okay to her. When she left the only persons in the house were Nicholas and Matthew. She recalls being told by Nicholas that Matthew was at the Townsville hospital and she attended the Townsville hospital. She recalls Matthew being in the emergency department and then taken up to a ward for special care.
28. When cross examined Mrs Baxter said that her husband was very excited when he discovered she was pregnant. At that time they were living in Townsville, she was in the Airforce and Nicholas was in the Army. As a part of his duties he would sometimes have to go away for courses. Throughout her pregnancy she went and saw doctors for regular scans and tests. She recalled that at one stage during her pregnancy Nicholas attended a Sergeants Promotion Course which required him to go away for something like 55 days. They stayed in touch. During this period she attended doctors for examinations and tests. At one point she was diagnosed with gestational diabetes, as a result of that she was given advice about her diet for her pregnancy. Nicholas did a lot of the cooking at home and a lot of the food shopping and preparation to help her. Both she and Nicholas arranged to prepare a nursery for Matthew so that he would have a room of his own when born. She described Nicholas as “hands on” when Matthew had his first bath and also with feeds and changing the nappy. Initially Matthew was breast fed and at times she expressed milk so that he could be fed milk from the bottle. That enabled Nicholas to feed Matthew. At some stage later on Matthew also had formula meals. By the time of 3 November 2011 it was common for Matthew to be fed formula from a bottle. As she described the sharing of responsibilities in the care of Matthew as being divided about 50 50 between her and Nicholas. Mrs Baxter clarified in cross examination when members of her and her husband’s family

visited. At the time she came home from hospital with the infant Matthew Nicholas's family were visiting from Toowoomba both his parents and his sister and her partner. They stayed for a time and after they left her parents arrived from Western Australia and visited together with her younger sister and her partner. They stayed until late October and shortly after they left Nicholas had to go away for a course to Adelaide. She confirmed that at the time of the 13HEALTH phone call her family were still visiting and staying with them at Rowley Place. She recalled that Matthew had vomited and there was what appeared to be streaks of blood in the vomit and that prompted the telephone call.

29. She gave evidence that at the time of the phone call to 13HEALTH Matthew had stopped breathing for a second or two. She said there were other occasions when he stopped breathing and in particular on one occasion on the night of the 2nd of November before she went to the boat course. She said that it was during this evening when she was at a linen cupboard looking for a face cloth she had Matthew in her arms and that Matthew brought his head up and down forcefully onto her forearm knocking the back of his head onto her forearm, his eyes were rolling into the back of his head and for a few seconds he wasn't breathing or responding. Shortly after this Nicholas rose from his sleep and took over the care of Matthew that evening so she could sleep.
30. In cross examination she gave evidence of an event that occurred when Nicholas was away. She was carrying Matthew in the crook of her arm when in the bedroom she tripped. She fell and landed awkwardly on the bed with one arm under his back and the other on his chest as she fell down on the bed. She also gave accounts of Matthew gulping for air, lip smacking and stiffening his body.
31. In cross examination Mrs Baxter described her husband as loving, caring and she confirmed that he was a nurturing father. She agreed that he was a responsible person and respectful. She never saw him frustrated with Matthew and never saw him lose his patience with Matthew or be rough towards Matthew. She described him as not quick to anger and she never saw him being violent. She never had any cause for concern or to believe him to be dishonest.

32. In re-examination she said that she couldn't say how often she'd seen Matthew gulping for air nor could she say how often she'd seen him stiffen his body or smack his lips.
33. **Frances O'Meara** was one of the paramedics who attended at 3 Rowley Place, Burdell on 3 November 2011. She was accompanied by another paramedic, John Rathbone. Through her a number of photographs of the residence, where the ambulance was parked and of the ambulance were tendered into evidence.³⁴ She arrived at the residence at 13:50 having been dispatched at about 13:42.
34. On arrival she alighted from the ambulance and walked into the premises while Mr Rathbone set up the ambulance to be ready to perform a resuscitation. When she found the defendant and the infant he was performing compressions on the baby on a change table. He gave her the brief "clinical rundown" that the baby had been alert, orientated during the morning and behaving normally. He was preparing a feed and heard some spluttering and went to check what was happening and the baby seemed to be having difficulty breathing. The baby suddenly became unresponsive, the pupils were unreactive and he stopped breathing whereupon he called Triple 0 and he was instructed to commence compressions.
35. She scooped the baby up in her arms and explained to the father that resuscitation would be continued in the vehicle. The baby's head was close to the crook of her elbow. She performed a three-finger compression. She said that she was only in the house for a very short time and she estimated that there was no more than 30 seconds for her to pick the baby up and leave the house. The baby was wearing a nappy.
36. Her observations of the baby were that it was very floppy, there was no muscle tone and it was grey in colour and unreactive. She was sure the baby was unconscious. In the ambulance the baby was placed on the stretcher and Rathbone had a bag valve mask ready to start ventilation. She straddled the stretcher facing

³⁴ See Exhibits 7, 8, 9 and 10.

towards the driver's seat and continued with the cardiac compressions. She did not notice any marks or signs of injury on the baby.

37. After a period of time estimated at eight to ten minutes, they were joined by an experienced ambulance officer Mr Crosby. It was Crosby who put a needle in the baby so that adrenalin could be administered. According to the notes made Mr Crosby said that there were three administrations of adrenalin. The first two at approximately 2:07 and 2:11pm had no effect. After a third administration at 2:15pm Matthew's heart began to beat again. Mr Crosby said that he and the other paramedics made an examination of Matthew from head to toe looking for abnormalities such as bite marks, sting marks or bruises. They checked the chest, the abdomen, the legs, the arms and Matthew was rolled onto his side. Nothing abnormal was detected.

The emergency department and the treatment in hospital

38. **Dr Carl O'Kane** gave evidence. He is a specialist in emergency medicine and Fellow of the College of Retrieval Medicine. On 3 November 2011 he was the consultant on duty for the resuscitation room in the emergency department of the Townsville Hospital. Matthew presented at the emergency room at approximately 2:24 pm. On presentation Dr O'Kane noted that Matthew had output (meaning he had blood pressure and a pulse) and he was told that previously there had been CPR in progress. Matthew was floppy (which is a term used for infants when there is no spontaneous movement or no movement at all) and he had no spontaneous respiration so that the only way to maintain oxygenation was to use a bag valve mask and push oxygen in and out.
39. The first and main issue to address was Matthew's airway and breathing because he had no spontaneous respiration. An airway was established by putting a tube inside the trachea. Dr O'Kane instructed one of his colleagues to place the tube which was done on the second attempt. A cannular was inserted into the left hand to allow for the administration of further drugs and also to take blood samples for tests. After the intubation an x-ray was taken so as to make sure that the tube was in the correct place (Ex 27). Dr O'Kane gave evidence that on his viewing of the chest x-ray (Ex 27) there was no sign of Matthew suffering from pneumonia. The

neonatal unit was informed of Matthew's arrival and Dr Alcock and his team arrived. Matthew was in the emergency department for 26 minutes before the hand over to Dr Alcock and the others from the neonatal unit was made. When Matthew left the emergency department he had a pulse. He left at approximately 2:40 pm and was transferred to the neonatal intensive care unit (NNICU).

40. Dr O'Kane was asked whether he had a conversation with Matthew's father. Dr O'Kane said he had a conversation with a man who identified himself as the father. He said it was important to obtain a history as it may give some guidance to what care should be administered. Dr O'Kane said he was told by the father that "he was in the kitchen at the time, and Matthew was in a high chair, and he was prepping food when he heard a noise, or Matthew cry out, and turned around and noted that Matthew was unresponsive, and lifted him out of the high chair and started CPR."³⁵
41. In cross examination Dr O'Kane agreed that there was approximately 15 to 20 minutes of down time which was a reference to an absence of circulation. This meant that during this time blood was not getting to the brain and oxygen wasn't being delivered to the brain. He agreed that permanent damage might be occasioned after 10 minutes or even 7 minutes. Nevertheless Dr O'Kane said that he had resuscitated people after 30 minutes who seemed to recover. Dr O'Kane said that one of the tests that was done was to measure the oxygenation within the blood. Some venous blood was tested, not arterial, and the level recorded was 78 percent. He said that ordinarily a physician would want to see something in the mid to high 90's as the oxygen saturation level.
42. **Therese-Antoinette Conroy.** In November 2011 Therese Conroy was a clinical nurse in the neonatal intensive care unit. At the time she had over 20 years experience. She attended the emergency department with doctors so as to collect Matthew and transfer him to the NNICU. She asked Matthew's father what had happened and he told her that he'd fed the baby in the morning and that he was due for another feed. He said that he heard a loud cry from the baby and he picked the baby up and the baby had a burp. He gave the baby his usual drops for colic

³⁵ T 1-84 I25-30.

and he said that the baby was breathing very shallowly. She was told that he gave the baby a cool shower and then called his general practitioner who told him to call an ambulance.

43. She said that on the 3rd November she saw no sign of any marks or bruises, abrasions or anything of that nature externally on the infant's body.
44. **Dr Gary Alcock** is a paediatrician with a specialty in neonatology who treated Matthew at the neonatal unit. He recalled being introduced to the defendant at the emergency department and from his recollection he was told that Matthew had woken up crying and that after not settling for a few minutes the defendant gave Matthew some drops to help him burp and went to feed him. At some point, he was told, Matthew became floppy and had shallow breathing and he phoned the general practitioner who advised him to call the ambulance. He was told that Matthew stopped breathing and after the ambulance was called the defendant started to attempt resuscitation. He recalled that in the emergency department he noticed two small bruises towards the centre of Matthew's chest but no other injuries. He did not do a full examination however until the resuscitation had been completed and Matthew was transferred to the neonatal intensive care unit. In the intensive care unit he conducted an examination and he noted that Matthew had two small bruises over his lower sternum in the middle of the lower chest but he could see no other bruising and no rashes. Matthew's pupils did not react to light, his heart rate was 120 and the blood pressure slightly low. He listened to Matthew's chest and to his heart and felt his abdomen and felt the fontanelle which was tense and tight. He said that the fact that the pupils were fixed was an indication of damage to the brain and damage to part of the brain called the brain stem. The tense or tight fontanelle indicated the pressure inside the skull or pressure inside the brain had increased. A number of blood tests were ordered including tests for bacterial infection, coagulation tests and blood and urine testing for metabolic conditions. Blood tests were done to measure the acidity and the oxygen and the carbon dioxide levels in the blood and an ultrasound scan of the head and heart were conducted. He was unable to find any evidence of an infection and a blood transfusion was ordered. A chest x-ray was available (Ex 27) and there was no evidence of pneumonia. He said that as at the 3rd of

November the object was to stabilise Matthew and treat as many possibilities as one could until he knew what was going on.

45. Dr Alcock conducted a further examination of Matthew on the 4th of November 2011. He noted there was no spontaneous movement, he wasn't moving any part of his body on his own, Matthew was not making breathing movements and all his breathing was being done by a ventilator. He re-examined the pupil responses and the pupils still had no response to light and noted his blood pressure. The fontanelle was still tense but his chest sounded normal. He listened to the heart and that sounded normal. Overall his observations were consistent with those on the earlier day following admission. An EEG test was ordered but that showed no electrical activity going on in the brain. This was an indication that the brain had been injured and either wasn't working or was severely injured. Dr Alcock ordered an MRI of the brain on the 4th of November and he received a phone call from the radiologist who told him that the MRI showed diffuse ischemia indicating damage from lack of oxygen and oedema which is swelling to the brain. Dr Alcock also requested that an ophthalmologist examine Matthew's eyes and the findings were that there was severe haemorrhage in the retina and a condition called retinoschisis. Blood tests for viruses and other tests for viruses were conducted but none were detected.
46. Dr Alcock said that having received the MRI and ophthalmology test results he thought that the bleeding in the brain and the severe bleeding in the eyes was consistent with injury.³⁶ Dr Alcock asked Dr Eric Guazzo, a neurosurgeon, to examine Matthew for a second clinical opinion. Dr Alcock took steps to arrange for notification to be given to various authorities.
47. Dr Alcock noted Matthew's condition on 5th November 2011. From all the observations there was no change. His opinion was that Matthew was not going to get better and that there was still no spontaneous movement. There was still no electrical activity on his EEG so the chances were he was not going to recover.

³⁶ See T2-21 I35.

48. In cross examination Dr Alcock agreed that by the time he wrote up his notes at about 5pm on the 4th November 2011 he'd reached the conclusion that nothing further could be done medically to assist in the treatment of Matthew and that he was not going to survive. Matthew was only being kept alive by the ventilator and support. He agreed that the blood test conducted on the 3rd November the 4th November when the results were analysed were consistent with there being a prolonged absence of oxygenated blood within the system following a cardiac-respiratory arrest.³⁷ He was questioned about the MRI examination and the ophthalmologist's examination. The MRI examination was conducted at about 1:30 pm on the 4th November and the retinal examination happened at about 3pm on the 4th. He agreed that he'd deferred to the ophthalmologist's opinion as was explained to him and he deferred to what the radiologist explained to him could be interpreted from the MRI examination. It was as a result of what he was told by both that he came to the conclusion about there being a reasonable suspicion of harm. He agreed that Dr Guazzo was asked to examine Matthew so that an opinion could be asked from his specialty as a neurosurgeon whether anything could be done for Matthew in respect of his brain injury.
49. **Dr Eric Guazzo** is a consultant neurosurgeon with over 30 years experience. At the request of Dr Alcock he attended the neonatal unit on 5th November 2011 to assess Matthew. His observations were that Matthew was in a very poor clinical state and he believed that the child was about to become brain dead. Matthew had all the clinical signs of very high pressure inside his head that is, raised intracranial pressure including a very tense fontanelle. He was on an artificial respirator and he had fixed dilated pupils and was unresponsive to any stimuli such as pain.
50. On physical examination he saw no evidence of injury or trauma to the head or elsewhere but he did examine the fontanelle and found it to be very tense. His evidence was that this was an indirect way of assessing pressure inside the head.
51. Dr Guazzo reviewed the MRI scan that had been arranged and on his review of the scans he saw evidence of bleeding inside the head, in the space around the

³⁷ See T2-39 I40.

brain and the space between the lining of the brain and the brain itself and areas of haemorrhage within the brain. He also noted changes that reflected his clinical assessment that there was very high pressure inside the head and that the brain was swollen. When asked what was the cause of the condition of Matthew he said³⁸ that because the space inside the skull is a closed environment when the brain swells it tries to escape through the various holes that are in the skull bones. The largest is at the base of the skull called the foramen magnum which is the space where the end of the brain joins the spinal cord and the brain herniates downwards through the space and in doing so causes pressure and distortion of the medulla which is the lower part of the brain that has important control centres for breathing and heart rate. Dr Guazzo further explained that when the brain swells it causes the cardiovascular and the respiratory system to be affected. Essentially the impact on the respiratory centre is that the brain compresses and impacts on the respiratory centre to prevent it from working effectively and normally and as the respiratory centre stops working breathing stops, which can be called apnoea. Turning to the cardiac system Dr Guazzo explained that when the brain swells it has an effect on the system resulting initially in what's called Cushing's Reflex which causes the blood pressure to go up for a while before ultimately falling. As the blood pressure comes down as the reflex is overcome so does the heart rate. Eventually the heart rate falls and the blood pressure falls and cardiac arrest follows.

52. Dr Guazzo expressed the opinion that the commonest cause of the bleeding inside the head in the brain is trauma but he noted that there were variations depending upon the age of the population. For children and infants the commonest cause of bleeding on the brain in the absence of congenital malformation is trauma. Dr Guazzo said that there were other rare medical conditions which may result in bleeding in the brain affecting the infant's ability to coagulate and control bleeding but these conditions didn't exist with Matthew. He expressed the opinion that in light of the evidence he saw on the MRI imaging and based on his examination of Matthew signs of these respiratory and cardiac consequences would have been almost immediate following the infliction of injury.

³⁸ T3-29 122ff.

53. In cross examination Dr Guazzo accepted that raised intracranial pressure can be caused by a range of different factors. He accepted that in the case of either a cardiac arrest or a respiratory arrest either could lead to an absence of oxygen going to the brain and that could cause either cardiac or respiratory arrest and that there were a large range of factors which might cause that that were non traumatic in origin. He accepted that in the case of ischaemic hypoxic injury he would not necessarily automatically consider trauma in the general medical sense, that would depend upon the clinical context in the circumstance. He said that his diagnosis that the hypoxic ischaemic injury evident in the brain was traumatic in nature was based on his clinical assessment. He accepted the longer there is an absence of oxygen to the brain the more devastating the effect of the hypoxia and the ischemia will be. He also accepted that there might be non traumatic causes of such injury following for example seizure events leading to hypoxia of the brain. When it was suggested to him that there could be a non traumatic cause of the collapse in this case he did not agree because the MRI was not consistent with that. For example in the case of a subarachnoid haemorrhage he did not agree that hypoxia might be the cause of the subarachnoid haemorrhage. It was a very very rare circumstance and he'd never seen it in his practice. For that reason he did not believe that it was the cause of the subarachnoid haemorrhage evidence on the MRI. With respect to the subdural haemorrhaging when asked as to whether it might be caused from a hypoxic state he said that he'd not seen it in his clinical practice. He was asked about a reperfusion injury but said that he did not accept that reperfusion causes subdural haemorrhage. Dr Guazzo accepted that in the circumstances where the MRI done on the 4th November it was not possible to be certain that the bleeding noted as present on the 4th was present on the 3rd November but he did say that the injury in the brain caused by hypoxia ischemia is a progressive progress and so an ongoing injury can occur over the days.
54. Dr Guazzo accepted that following a traumatic event to the head and brain that there might be a significant period of time before the victim might collapse as a result of the injury. He accepted that an increase in cranial pressure might build up over longer than a day. He also accepted that if an originating event that caused complications in the brain were non traumatic in origin that the ultimate condition and collapse might develop over time and could happen over days or even longer.

55. In re-examination Dr Guazzo said that if there'd been a seizure event he would not expect to see a subdural haematoma and neither would he expect to see a subarachnoid haematoma.

The autopsy, subsequent examinations and investigations and expert opinion evidence – Crown case

56. **Dr David Williams** is a forensic pathologist and the former director of anatomical pathology at the Townsville Hospital. He performed an autopsy on Matthew on 7 November 2011 and further examination on 8 November. He noted what he described as “vague bruises” to the left side of the forehead with abrasions.³⁹ He agreed that there was no bruising to the rear of the head and that the only marks noted were to the left side of the head. When confronted with his notes where he had described the marks as “an area of pink discolouration” he said that he was not being dogmatic in calling it a bruise that he saw something vague as a bruise. Further in cross examination he accepted that it was possible that the marks were caused by the attachment of an EEG monitor.⁴⁰ Under further cross examination he said that the area of vague bruising that he noted would not have been inflicted by severe force, there may have been some pressure of a hand perhaps causing a bruise but nothing too drastic.⁴¹
57. On internal examination he noted the subdural haemorrhage⁴² and a subarachnoid haemorrhage as well.⁴³ He said there was very little bruising to the skull and there was no fracture obvious either. He did not detect any abnormality or injury with respect to the cervical spine.⁴⁴
58. His opinion was that Matthew had suffered from a head injury and that there had been a “serious assault” to the head.⁴⁵

³⁹ See e.g. T5-54.

⁴⁰ See T5-68 – 5-69.

⁴¹ T5-65 134 See further T5-67 120.

⁴² T5-56.

⁴³ T5-60 127.

⁴⁴ T5-70 17.

⁴⁵ T5-60.

59. On examination of the lungs and the lymph nodes he noted some pathology that could be consistent with infection.
60. With respect to the issue as to whether a subdural haemorrhage or a subarachnoid haemorrhage might be caused by hypoxia Dr Williams was confronted in cross examination with contradictory statements between his evidence and his evidence at the earlier trial. He conceded that his memory of the examination had been affected.⁴⁶ Nevertheless he maintained his opinion that there had been trauma to the head causing the subdural and subarachnoid haemorrhages. He acknowledged however that at the earlier trial that he said when asked his opinion about the cause of death he said “no, I can only speculate”.⁴⁷
61. With respect to his health and memory generally Dr Williams informed the court that as a result of fungal and viral infections sustained when he was performing an autopsy he had to be admitted to hospital for three months about a year ago. That he sustained meningitis encephalitis and a damaged eye and that it had shaken his brain up a bit but that he liked to think that he was “90 percent normal”.⁴⁸
62. **Dr Jeremy David Robertson (JD Robertson)** is a specialist haematology with a specialist interest in paediatric haematology. He is a staff specialist at the Queensland Children’s Hospital as a paediatric haematologist and also works privately with a commercial enterprise. He was called to give evidence concerning the interpretation of certain blood samples taken from Matthew whilst he was treated in the NNICU.⁴⁹ Concerning the readings of Matthew’s INR prothrombin time his opinion was that the initial result was not consistent with a primary bleeding disorder or an inherited or underlying bleeding disorder, the prothrombin time was not high enough to indicate an underlying cause of bleeding from those sources. Further he offered the opinion that within the limits of the screening test there was no evidence of a congenital or underlying inherited factor deficiency.

⁴⁶ See e.g. T5-74 125 to T5-76 120.

⁴⁷ See T5-77 11-10.

⁴⁸ T5-61 to 5-62.

⁴⁹ See e.g. Ex 14.

63. He was asked about the significance of the report that on the 8th of October 2011 Matthew's parents had noted blood in vomit. Dr JD Robertson said⁵⁰ that bleeding from an upper gastro intestinal tract either the stomach or the oesophagus newborns or infants typically relates to either a small area of inflammation or swallowed blood from breast feeding. His opinion was that it was an unusual presentation of a bleeding disorder. If it was unusually prolonged, not an isolated incident, then he would question whether there was a problem with blood clotting but of itself it's not evidence for or against a bleeding disorder.
64. He was told of the evidence of numerous retinal haemorrhages in both eyes and asked whether it would be indicative of a bleeding disorder. He expressed the opinion that one would expect some kind of trauma to instigate such a condition. In general a bleeding disorder does not make a child bleed spontaneously but it can increase the amount of bleeding that occurs associated with trauma.
65. With respect to other disorders he said that the test results indicated that Matthew did not suffer from chronic disseminated intravascular coagulation (DIC) and in the case of the tests for the "von Willebrand factor" his evidence was that the indications were consistent with a reaction to a cardiac arrest.⁵¹
66. When cross examined he agreed that it was apparent from the first test that Matthew was in a state of "metabolic acidosis" which was consistent of there being an absence of oxygen supply within the blood system. Dr JD Robertson explained that metabolic acidosis is a downstream effect of prolonged hypoxia, as specifically prolonged ischemia. He agreed that hypoxia can be one cause of metabolic acidosis but there are others.
67. He agreed that one of the features in Matthew's case which was consistent with the absence of oxygen and the ischemia and hypoxia is the lactate level⁵² which was at a critically high level and that it was consistent with there having been a period of absence of adequate oxygen supply.

⁵⁰ T4-9 at p5.

⁵¹ See generally T4-10.

⁵² See T4-12 l45.

68. He agreed that hypoxia is a term meaning the absence of oxygen. Ischemia is the absence of oxygenated blood supply to the tissues and that if there is an hypoxic ischemic injury or insult that is a descriptor for the absence of oxygen and oxygenated blood going to the tissues which could result in injury and damage to the tissues and if prolonged death to the tissues.⁵³
69. He agreed that a mild bleeding disorder of some kind could not be excluded in Matthew's case in light of the test results. Dr JD Robertson said that such disorders could not be excluded without specific testing.
70. **Thomas Edward Robertson** (TE Robertson) was called in the prosecution case. He is a neuropathologist and director of neuropathology for Pathology Queensland. He has been practising as a neuropathologist and pathologist for approximately 20 to 25 years.
71. He examined the brain of Matthew Baxter which was received from the Townsville Hospital following the autopsy conducted by Dr Williams.
72. Dr TE Robertson noted when he examined Matthew's brain that it was swollen, it was a very delicate brain and was difficult to examine because it was quite soft. There was some subdural blood still attached to the brain on the right frontal lobe and there was a separate fragment of subdural blood that had detached from the brain. There was a little bit of subdural blood in the cerebellum and there was some subarachnoid haemorrhage. He elaborated that he was able to see an acute subarachnoid haemorrhage macroscopically and that when he examined the brain microscopically he could confirm both subdural haemorrhage and subarachnoid haemorrhage. In addition to the swelling the brain showed extensive ischaemic damage which is damage to the brain from not having enough oxygenated blood.
73. In evidence in chief he was asked what could be the cause of the swelling to the brain and he said that many things could cause swelling for example trauma particularly in infants. He noted that Matthew had a cardiorespiratory arrest and was resuscitated and his opinion was that could cause swelling to the brain.

⁵³ See T4-14 110-25.

Infections could also cause swelling and metabolic abnormalities could cause swelling. In this case there was no evidence of tumour. He did not detect any evidence of infection.

74. More specifically when asked to elaborate Dr TE Roberson said that when he examined the brain he saw a subdural haemorrhage still attached to the right frontal lobe, on the front of the right side of the brain. There was some subdural haemorrhage that had detached but he had Professor William's report who had observed that on the front part of the brain. There was a minor bit of subdural blood present in the cerebellum. With respect to the subdural haemorrhage he measured it but when asked how it would affect a living person he said it would not have had any affect really it wouldn't be symptomatic. He rejected the suggestion the subdural haemorrhage might cause the brain to swell. He said that there might be a little bit of localised swelling but it would not produce the diffuse cerebral swelling that was evident in Matthew's brain. In evidence in chief when provoked about his statement that a possible cause of the swelling was trauma he said that it could have been many causes, it could be trauma and it could be hypoxic ischaemic injury. He said both those possibilities came into play in this case.⁵⁴
75. Concerning the subarachnoid haemorrhage he said that macroscopic examination could not detect a very extensive subarachnoid haemorrhage but microscopic examination enabled him to find some more.⁵⁵ He was unable to isolate the source of the subarachnoid haemorrhage.
76. He was asked what the difference was between subdural and subarachnoid haemorrhaging. Dr TE Robertson explained that it was the anatomic location; subdural haemorrhaging is "interesting" because there's no subdural space, it is a kind of potential space between two layers; whereas the subarachnoid space is actually a true space that contains cerebrospinal fluid which the brain is suspended in and there's a little thin membrane that separates the two spaces. Consistent with this subdural blood, he explained in an acute setting, can be washed off the

⁵⁴ See T4-21 115. For further discussion see my reason below at [253].

⁵⁵ See T4-21.

surface of the brain whereas with subarachnoid haemorrhaging if the brain is put under a tap the blood cannot be washed off because it is trapped under a very delicate membrane.

77. He was asked whether he noticed any tearing to the brain and he said he didn't identify any tearing that he thought was pathologic when he examined the brain macroscopically. When asked what was the likely source of the blood he said that the subarachnoid haemorrhaging in this case could be traumatic in origin, it is often associated with contusions. Significantly however he said that he couldn't identify any contusions.⁵⁶ Dr TE Robertson went on to explain that subarachnoid haemorrhaging can also be seen in a hypoxic ischaemic injury as well so he thought that both of those are possibilities in this case.
78. When asked he said he did not observe any contusions.⁵⁷ He went on to explain how he would investigate for contusions and how he would examine the brain.
79. He was asked if he located anything else microscopically and he said that he saw quite extensive hypoxic ischaemic damage which indicated there hadn't been enough oxygenated blood getting to the brain. This damage was quite extensive and was seen in many areas of the brain.⁵⁸
80. He said that he examined the brain stem and that showed quite extensive ischaemic damage throughout including areas where all elements in the tissue had died.⁵⁹
81. He said that he noticed no evidence of disseminated intravascular coagulation (DIC) in the brain.⁶⁰
82. He was asked whether he could identify any mechanical damage to the brain and he said that he couldn't detect any mechanical damage. He went on to say that the

⁵⁶ T4-22 124.

⁵⁷ T4-22 127.

⁵⁸ T4-23 11-5.

⁵⁹ T2-23 110.

⁶⁰ T4-23 140-45.

ischaemic damage was so severe and widespread that he couldn't say with confidence whether there was or was not mechanical damage.⁶¹

83. Dr TE Robertson explained that he received the brain for examination but the spinal cord was not available when it came time for his examination nor was the dura.
84. Under cross examination he confirmed that when he examined the brain there was no evidence at all of any bruising or contusion within the brain itself.⁶²
85. He confirmed that there was no evidence of any tears within the brain itself.⁶³
86. There was no evidence of any laceration.⁶⁴
87. He confirmed that he did not find any evidence of there being any haemorrhage within the brain (an intraparenchymal haemorrhage).⁶⁵ In other words there was no focal lesions within the brain mass itself apart from what appeared to be the consequence of ischaemic damage.⁶⁶
88. Significantly there was no evidence found of any torn bridging vein or venous source, there was none on the surface of the brain nor did he find any localised subarachnoid haemorrhage at the relevant sites.⁶⁷
89. In cross examination he confirmed that his reference to hypoxic ischaemic presentation of the brain could be described as diffuse hypoxic ischaemic encephalopathy⁶⁸
90. Dr TE Robertson confirmed that in respect of the subdural haemorrhage and the subdural clot that they could be described as being small and thin of minimal or negligible mass affect. In respect to the subdural haemorrhages Dr TE Robertson

⁶¹ T4-26 130.
⁶² T4-28 120.
⁶³ T4-28 128.
⁶⁴ T4-28 133.
⁶⁵ T4-29 17.
⁶⁶ T4-29 110.
⁶⁷ T4-29 115.
⁶⁸ T4-29 120.

said that they might produce localised swelling but that would be negligible or only minor.

91. Dr TE Robertson confirmed that with respect to the subarachnoid blood that there were small areas and that they would not have had much affect in terms of any affect on the child.⁶⁹
92. Dr TE Robertson was pressed in cross examination concerning whether a hypoxic injury could lead to a subdural haemorrhage. His opinion was that there was no evidence that a hypoxic injury results in subdural haemorrhages.⁷⁰
93. He was asked in cross examination about the possibility of reperfusion injury to the brain. He confirmed that following a cardiorespiratory arrest there could be cellular damage to the tissue of the brain such that with the resumption of blood flow it could cause damage to the tissues and cells once the blood starts to flow.⁷¹
94. He said in this context that reperfusion is the recommencement of circulation after such a cardiorespiratory arrest.
95. In this context Dr TE Robertson said that while reperfusion might cause damage in the context of a subarachnoid haemorrhage there was no evidence that reperfusion would contribute to any subdural haemorrhage.⁷²
96. **Glen Anthony Gole** gave evidence in the prosecution case. He is a specialist paediatric ophthalmologist who has practiced in the field for 43 years. Paediatric ophthalmology is a subspeciality of ophthalmology. He has in his career published over 130 papers almost all of them peer reviewed.
97. He was asked what retinal haemorrhage is and he informed the court that it was a bleeding in or on the surface of the retina. There can be a lot of causes, bleeding disorders, metabolic disorders, coagulation disorders. In children small retinal haemorrhages can be seen around the optic nerve which can occur when there's

⁶⁹ T4-30 135.

⁷⁰ See T4-31 113-27.

⁷¹ See T4-31 129-41.

⁷² See T4-32 17-16 and in this context T4-32 135 and T4-33 137. See further T4-34 115-24.

raised pressure. He said there are other causes including non-accidental injury or shaking injuries which causes shearing across the surface of the retina and can cause bleeding.⁷³

98. He said 70 percent of newborns will have some haemorrhages in their eye. They almost always disappear within a week or so but they have been observed to last as long as seven to eight weeks in an exceptionally rare case. It is thought that the probable cause is the birth process itself including the moulding of the head and the pressure on the head during the birth process.
99. The haemorrhages that are acute appear on the surface of the retina and usually disappear within days to a week. The pre-retinal haemorrhages last up to several weeks and they're the ones people see several weeks after birth.
100. He was asked whether resuscitation caused haemorrhages. He said that it rarely occurs in the retina and when they do they are not widespread and they tend to be superficial in the retina and around the optic nerve.⁷⁴
101. Dr Gole said that anaemia could also cause bleeding inside the eyes but that occurs in the context of very severe anaemia and almost always just in the back of the eye.
102. Raised intercranial pressure can cause retinal haemorrhages in two ways where the optic nerve swells you can get little splinter haemorrhages around the optic disc and if you have a sudden acute rise in the intercranial pressure then more extensive bleeding can occur. This is sometimes called Terson Syndrome. It is more common in adults than children.
103. Dr Gole said that a child crying would not suffer retinal injuries nor a child vomiting. He did not believe it occurs in children if one held their breath nor if a child suffered a seizure.⁷⁵

⁷³ T5-4 112-22.

⁷⁴ T5-5 125.

⁷⁵ T5-6 11-13.

104. Dr Gole was shown pictures of both Matthew's right and left eye taken on 4 November 2011.⁷⁶
105. He pointed out pre-retinal haemorrhages sitting on the front of the retina and round haemorrhages sitting on the retina or deep in the retina in the right eye.
106. With respect to a pale area he noted the splitting of retina called retinoschisis in the centre of the photograph (Ex 17).
107. Dr Gole described the retinal haemorrhages as widespread, multiple layered and too numerous to count.⁷⁷
108. When asked what sort of mechanism would cause that type of haemorrhaging he said that the clinical picture shown by the photograph is seen following trauma. He said that no other cause was operative that could explain the bleeding of this nature. He said the sort of trauma is a to and fro motion of the head or an impact of the child's head against a surface or a combination both. He said that he thought that if the child is rocked backwards and forwards and the vitreous inside the eye which is attached at the front and the back of the eye has a bit of inertia and it shears backward and forwards across the surface of the retina as the eyes go backward and forwards. It is thought that that is the mechanism of both the retinal haemorrhages and the retinoschisis.⁷⁸
109. He said that these types of injuries are seen in severe head injuries such as fatal roll over car crashes and falls from a great height. He said that there is one reported incidence of injuries being sustained of a mother falling on a child and a fatal injury where a television fell on a child's head.
110. With respect to how much force would he require to produce the haemorrhages he said it was hard to quantify except to say that it's more than usual, extreme force produces the findings seen here.⁷⁹

⁷⁶ Ex 17 and Ex 18.

⁷⁷ T5-8 17-13.

⁷⁸ T5-8 114-24.

⁷⁹ T5-8 145.

111. With respect to the left eye (Ex 18) Dr Gole said there were numerous pre-retinal intraretinal and some flame-shaped haemorrhages.
112. He also identified an area which displayed a macular schisis with a retinal fold.⁸⁰ He pointed out a retinoschisis as well and said that the retinal haemorrhages in the left eye were too many to count.⁸¹
113. Dr Gole went on to say that there were multi-layered haemorrhages too numerous to count and which were widespread. He confirms that retinoschisis could be seen in both eyes. And in respect of retinoschisis he said that in children it is associated with abusive head trauma, it's uncommon but it is an indicator of severity.⁸²
114. Dr Gole said that in his career he'd seen combinations of retinal haemorrhages and retinoschisis quite often and almost always it was associated with a non-accidental injury.⁸³
115. Dr Gole expressed the opinion that he would not expect to see the combination of retinal haemorrhages and retinoschisis or bi-lateral retinoschisis from raised intercranial pressure at least not to this extent. Retinal haemorrhages are seen in a small number and around the optic nerve when intercranial pressure is raised. He said that you would not see retinoschisis.⁸⁴
116. Dr Gole confirmed that he could see a retinal fold which is brought about by traction and the edge of the retina is pulled up by traction which is the pulling on the wall of the eye and on the innermost layer of the retina. It is thought that the retinal fold was caused by vitro retinal traction due to rapid backwards and forwards movement of the eye.⁸⁵

⁸⁰ T5-9 130.

⁸¹ T5-9 133-39.

⁸² T5-10 130.

⁸³ T5-10 140-45.

⁸⁴ T5-11 11-13.

⁸⁵ See T5-11.

117. With respect to retinal folds Dr Gole said that he's extensively reviewed the literature on the subject from which the vast preponderance indicates that it is related to non-accidental injury.⁸⁶
118. Under cross examination Dr Gole accepted that to a large extent his opinion in relation to the retinoschisis was based upon literature that he'd read and that it was uncommon.⁸⁷ Similarly in relation to the macular fold he agreed that his evidence was based largely upon his reading of the literature because he'd seen few of them.⁸⁸
119. Concerning the literature and thinking about the association of retinal bleeding and abusive head trauma Dr Gole accepted that shaking as a mechanism was still the subject of some conjecture though there's a body of literature which does support the hypothesis that shaking can cause such injuries.⁸⁹ Dr Gole acknowledged that to a large extent he relied upon anecdotal evidence from alleged perpetrators of child abuse to support his opinion about shaking.⁹⁰ He agreed that anecdotal evidence is "low level evidence".⁹¹
120. With respect to the anatomy of the brain and the eyes Dr Gole said that there was an artery that came in from the brain as the blood supply to the eyes and to the retina⁹² further he said that the optic nerve takes an electrical signal back from the eyes to the brain but because they're not in the same anatomic location the brain can be damaged and the eye not be damaged and vice versa.⁹³
121. He agreed however that in intracranial pressure within the head can transmit through to damage the back of the eye but at the optic nerve, it wouldn't cause damage actually within the eye except for the secondary effect on the optic nerve.⁹⁴

⁸⁶ T5-12 15.

⁸⁷ T5-12 134 – T5-13 113.

⁸⁸ See T5-13.

⁸⁹ T5-18 11-10.

⁹⁰ See T5-18.

⁹¹ T5-20 118.

⁹² T5-21 135.

⁹³ T5-22 18.

⁹⁴ T5-22 115-20.

122. With respect to the dating of retinal haemorrhages Dr Gole said must occur within a few days of onset and that haemorrhages too numerous to count usually disappear within three to four days in most cases. Using technology and further studies suggest now that whatever caused the haemorrhages would have been within a few days.⁹⁵ Nevertheless Dr Gole agreed that one cannot look at photos and say this occurred one or two weeks ago.⁹⁶ Dr Gole's best guess was that the pictures shown in the photographs would have been caused by an event one to three days before.⁹⁷
123. Under cross examination he maintained his opinion that the kind of eye injuries seen require extreme forces to produce them and in cases that have been sighted a fatal outcome.⁹⁸
124. He was asked questions about reperfusion affecting the eyes and he agreed that it is possible that a reperfusion injury can occur to the eye when there's been a prolonged period of oxygen deprivation⁹⁹ but he denied that a reperfusion injury can include retinal haemorrhaging or retinoschisis.
125. **Dr Anthony Lamont** gave evidence in the prosecution case. He has been a radiologist working as a specialist paediatric radiologist for approximately 40 years. He has about 60 publications in his field and is familiar with the different types of imaging such as x-rays, CT scanning, nuclear medicine and MRI investigations.
126. He was asked to review MRI scans taken of Matthew's head, skull and brain on 4 November 2011 when Matthew was approximately six weeks old. In general terms the scan showed a fair amount of bleeding inside the skull, over the surface of the brain. According to Dr Lamont it also showed the brain was very severely swollen and there was bleeding both over the surface of the brain and going into the brain substance itself.¹⁰⁰

⁹⁵ T5-25 140.

⁹⁶ T5-26 17.

⁹⁷ T5-26 138.

⁹⁸ T5-41.

⁹⁹ T5-49 120.

¹⁰⁰ See T3-10 125.

127. Dr Lamont was asked what would come first, the bleeding within the brain or the swelling? He said, almost certainly the bleeding would come first and almost certainly what's happened is that the blood has irritated the surface of the brain causing the swelling. He referred to the bleeding inside the brain and said that in itself it would cause brain swelling. In substance his opinion was that the swelling was secondary to the primary cause.¹⁰¹
128. When asked what effect it would have on the cardiac or respiratory system he said that the respiratory centre which controls breathing and is situated in the brain stem in the medulla and that if it is compressed it will stop breathing. Further the cardiac system will slow down but not necessarily stop.¹⁰²
129. In evidence in chief Dr Lamont was taken to a number of MRI images which he described as indicating abnormal features. In respect of these features he said that the substance or cause was almost certainly blood.¹⁰³ Dr Lamont was then asked what would cause the bleeding in the brain stem and he said that the bleeding in the brain stem was due to impaction, twisting forces.¹⁰⁴
130. After being shown a number of images he was asked what type of haemorrhaging he had seen and he said:
- “this is a haemorrhage into the substance of the brain itself, the brain has been torn. And we've got three types of bleeds here, we've got bleeding into the dura, the subdural or interhemispheric dura. We've got bleeding over the surface of the brain and subarachnoid space. And we've also got bleeding into the brain itself in the spots I've indicated.”¹⁰⁵
131. Dr Lamont was asked to give an example of the presence of subdural bleeding¹⁰⁶ and he said that the subdural bleeding evident on its own in this case wouldn't have had much impact on the infant because it was not “occupying a lot of space”. It was actually “a small subdural”.¹⁰⁷

¹⁰¹ T3-15 111-23.

¹⁰² T3-15 125-30.

¹⁰³ See e.g. T3-15 141 – T3-16 110. See further his comments with respect to the cerebellum at T3-16 129-34.

¹⁰⁴ T3-16 135.

¹⁰⁵ See T3-18 11-5.

¹⁰⁶ See T3-19 126 ff.

¹⁰⁷ T3-20 15.

132. He was asked whether there was any relationship between the bleeding in the subdural space and the subarachnoid bleeding that he had previously identified and he said that the link came from the same bridging veins which if torn can bleed into anyone of the layers or the space between any one of the layers of the membrane surrounding the brain.¹⁰⁸
133. Dr Lamont was directed to certain images which he said indicated a tear or a bruise at the back of the brain on the left (Matthew's left hand side) indicating what he called a contusion.¹⁰⁹ This matter was raised again with him in the context of his evidence concerning the subdural bleeding¹¹⁰ in respect of which he said:
- “We've got two lesions, one at the front and one at the back. The terminology that's given to this is a contrecoup injury. ...I've used the word “contrecoup” simply because it describes that front-back pattern.”¹¹¹
134. He was asked whether the front and back indication of bleeding was indicative of more than one application of force. Dr Lamont said not necessarily, that it could be two applications of force or maybe one complex application of force.¹¹² Dr Lamont indicated what he said was evidence of bleeding near the eyes and what he called retinal haemorrhaging.¹¹³
135. Dr Lamont identified oedema as having two components, swelling of the cell itself and fluid lying between the cells. He said that oedema can stop the brain from working properly as the swelling develops. With respect to the MRI scans of Matthew he said the oedema was extensive and that the whole brain was involved.¹¹⁴

¹⁰⁸ T3-20 110.

¹⁰⁹ See T3-17 122-29.

¹¹⁰ See generally T3-20.

¹¹¹ See T3-20 137-45.

¹¹² T3-21 11-5.

¹¹³ See T3-21 135-45.

¹¹⁴ See T3-23.

136. He was asked whether the injuries that he'd identified, the bleeding, the swelling, the blood in the subdural and the contusions were consistent with trauma Dr Lamont said that he couldn't think it could be consistent with anything else.¹¹⁵
137. He was asked about whether he could age the bleeding into the brain. Dr Lamont said that the haemorrhaging seen in the MRI scan occurred in the region of 24 to 48 hours before the scans were taken on 4 November.¹¹⁶
138. Dr Lamont was shown the x-ray performed on 3 November 2011. He said that he could not see any evidence of pneumonia in the x-ray.¹¹⁷ Further in relation to the lung he could not see any true granulation, what was seen he described as an artifact.¹¹⁸
139. Under cross examination Dr Lamont agreed that there was no evidence in the images of any soft tissue swelling to the scalp and there was no swelling underneath the scalp that could be seen, nor was there any evidence of skull fracture or neck injury either to the bony structures or soft tissue structures.¹¹⁹ Dr Lamont agreed that it was his opinion that the bleeding in the brain came first followed by the swelling.¹²⁰ He agreed that his process of reasoning depended upon the following series of inferences:
- (a) There was some shearing forces which operated in the first instance.¹²¹
 - (b) The shearing forces acted in a way that ruptured or tore a bridging vein or bridging veins.¹²²
 - (c) The torn bridging vein or veins has produced bleeding.¹²³

¹¹⁵ T3-24 130.

¹¹⁶ T3-25 110.

¹¹⁷ See T6-3.

¹¹⁸ T6-4 117.

¹¹⁹ T6-14.

¹²⁰ See e.g. T6-19 15.

¹²¹ T6-18 115-20.

¹²² T6-18 123.

¹²³ T6-18 125.

- (d) The bleeding occupied an area on top of the brain within the subarachnoid space but not the subdural space.¹²⁴
 - (e) The blood sitting in the subarachnoid space irritated the brain;¹²⁵
 - (f) In response to that irritation the brain has swollen.¹²⁶
140. Dr Lamont agreed that if any of the inferences that he had articulated were not accurate then his conclusion is likely not to be accurate. He also confirmed that he was unable to see any torn bridging veins within the images that he examined.¹²⁷
141. **Dr Catherine Skellern** gave evidence in the prosecution case. She is a medical practitioner and qualified paediatrician. She also has qualifications in the areas of forensic medicine and pathology. Her specialty involves paediatric forensic medicine. She is employed by the Queensland Children's Hospital in Brisbane and has a private practice particularly in relation to the assessment of children who have developmental, behavioural and learning problems. She has published in the field of forensic medicine, child protection and autism and learning and development and behavioural problems in children.
142. As she was asked about the significance of any of the report that on 8 October 2011 Matthew had vomited and that there was blood within his vomit. She said the most common cause of that would be maternal origin, for example a cracked nipple. Concerning the report that at the time Matthew stopped breathing for a second or two she said the most likely cause was a temporary occlusion of the upper airway which is common if there is milk or something in a baby's mouth. She said it was not apnoea which by definition would have to last at least 10 seconds and would have to be associated with a colour change. Concerning the evidence before the court that on the 2nd of November 2011 Matthew had shaken his head for an undetermined amount of time she said there was no medical relevance to that. She noted that babies have involuntary movements because of

¹²⁴ T6-18 128-32.

¹²⁵ T6-18 137.

¹²⁶ T6-18 140.

¹²⁷ T6-19 120.

their age and it's not unusual or atypical for a baby to move his or her head from side to side. It doesn't signify necessarily any pathology. She was also told of the occasion that occurred at 2:00 or 3:00am on the 3rd of November 2011 when Mrs Baxter was holding Matthew in her arms and he knocked his head down forcefully onto her forearm whacking the back of his head. She said that that was a very low force contact type event and would not be expected to cause any harm in any way to a baby. She saw no significance in reports that his eyes rolled to the back of his head and that he wasn't breathing for a few seconds. Further to this she saw no significance in observations that Matthew might gulp air and suck or swallow air with his dummy in his mouth nor any significance in reports that he would on occasion stiffen his body. She said that reports of lip smacking were part of the sucking reflex.

143. She was shown x-rays (Ex 27 and Ex 30) and she confirmed that she could see no sign of pneumonia in the x-rays.
144. In the context of Matthew's illness and condition she saw no clinical significance in Dr William's report that there was evidence of some granulation within Matthew's lungs.
145. With respect to the reports of tense fontanelle she said that that indicated raised intercranial pressure in other words there was excessive pressure inside the skull.
146. She was told of a radiological report that indicated Matthew had suffered a subdural haemorrhages to both the right side and the left side of the front of the brain, a subarachnoid haemorrhage, blood in the falx and in the tissues of the brain, swelling of the brain and a contusion noted to the rear of the brain.¹²⁸ She was asked what mechanisms could cause those injuries. She said that the subdural and subarachnoid blood was an indication of trauma she said those findings and the other findings noted indicate that there was trauma involved in the cause of the collapse.¹²⁹

¹²⁸ See T7-7 122-33.

¹²⁹ T7-7 135-40.

147. She was asked what kind of trauma could cause those observations and she replied:

“It would have to involve the production of angular acceleration and deceleration forces that would cause the bridging veins, which is the source of the blood that ends up in the subdural and subarachnoid space to collect, and also causes some injury to the brain, and irritates the brain swelling and causes injury in the brain stem that accounts for the apnoea and the respiratory collapse”¹³⁰

148. She went on to say that a failure to breath then invokes what is called a secondary “neuro-pathological cascade” because the brain is not being oxygenated and the brain tissue starts to swell and ultimately that’s an irreversible process.¹³¹

149. She was asked what causes a subdural haemorrhage and she said that it is derived from “stretching and tearing of the bridging veins” which are essentially over the surface of the brain and come together along the mid-line and then drain into the venous collection reservoirs which are called the sagittal sinuses which then drain the blood from the brain so that there’s movement of the brain inside the skull. She went on to say that in this case if there’s movement of the brain inside the skull the veins stretch and they have a capacity to stretch but when the movement is such that it exceeds the stretchability of the veins they tear and they leak blood.¹³²

150. She emphasised that the only source in the brain for a subdural haemorrhage is blood from the bridging vein.¹³³

151. She was told that there was “evidence” of the subdural haemorrhages to the front and the rear contusion and she said that typically as the brain is rotating there will be internal impact on the inside surface of the skull causing injury to the surface of the brain through that mechanism.¹³⁴ She confirmed that she was aware that Matthew presented with no visible injuries and that at autopsy there was no fracture of the skull noted.

¹³⁰ T7-8 13-8.

¹³¹ T7-8 110-14.

¹³² See T7-8 115-25.

¹³³ T7-8 128.

¹³⁴ T7-8 130-33.

152. Dr Skellern was asked in this context that if Matthew's head had struck a solid surface would she expect to see any injury. She said that if it was a very hard surface then she would generally expect to see a visible sign of injury such as boggy swelling likely underneath a skull fracture but hitting a surface that might have some capacity for yielding might not necessarily leave a physical injury at all and not even a skull fracture. So if there's an accelerated throw onto a yielding surface she said that that can still cause and initiate that movement she described of the brain rotating inside the head to cause the injuries without leaving any visible sign that there's been an impact from the outside.¹³⁵
153. She also said that shaking on its own could be enough to cause the injuries.
154. She confirmed that she was aware that there was no evidence found of any injury to the neck or neck muscles of Matthew but she said that she would not necessarily expect to see an injury to the neck. She said it depended on the extent to which the area is examined and looking from the outside there may not be any reasonable sign even in the neck muscles to indicate that there's been any application of force of the type she described.
155. She was asked how long it would take for swelling in the brain to come about after any shaking or acceleration or deceleration and she said that it was difficult to say but from the perspective of hypoxia it can take only a minute before it starts to have effects within the brain. She said it's not an instantaneous thing and it would take some time and she couldn't precisely define how long it would take.
156. Concerning a question noting the evidence of the subdural and subarachnoid haemorrhages and also the swelling to the brain she was asked which would occur first. She said that the tearing of the bridging veins causing the blood to collect in the extra-axial alongside the interruption to the bleeding or the apnoea would occur first. The brain swelling would follow.¹³⁶
157. She was asked what would cause an interruption to breathing and she said that it was a product of physical stretching of the brain stem which is the central control

¹³⁵ See T7-8 140 to T7-9 14.

¹³⁶ See T7-9 141-45.

of respiration and that there could either be a temporary or a permanent injury in that area causing a cessation of breathing. She was asked about the findings of the eye examination of Matthew and that it revealed numerous retinal haemorrhages in both eyes and as well retinoschisis and retinal folds. She said that those findings have only ever been described in trauma being high force events and that to date they've never been described in any natural condition.

158. She was asked about the brain stem and told of the findings by Dr TE Robertson of infarction and she said that as the brain swells beyond its capacity to be accommodated within the skull ultimately it descends through the foramen magnum and it causes a cessation of breathing. In this context apnoea is the indicator that there is an abnormality in control of respiration.¹³⁷
159. She was asked in the context of findings of brain swelling, subdural haemorrhages, subarachnoid haemorrhages, bleeding into the brain tissue, injuries to the eyes and asked what in her opinion had caused the injuries. She said that there'd been an application of force that had resulted in the production of angular acceleration deceleration forces that's caused the injury profile and she said its well described in abusive head trauma.¹³⁸ She said that the forces that could bring about that result would be shaking with or without impact.¹³⁹
160. She was asked to comment upon a 2016 report by the Swedish Agency for Health Technology and Assessment in which the authors concluded there was limited evidence to support the role of shaking as causing three features called "triad" which were retinal haemorrhages, subdural haemorrhages and end to end encephalopathy.¹⁴⁰ She was given the opportunity to explain why she didn't accept the report and why its methodology was in her view questionable.¹⁴¹
161. When cross examined Dr Skellern confirmed that she'd relied on reporting of the MRI images made by Dr Lamont. In particular she relied upon the fact that there were finding of parenchymal haemorrhage and laceration of the brain. Further she

¹³⁷ See T7-10 135-40.

¹³⁸ T7-10 146 – T7-11 15.

¹³⁹ T7-11 110.

¹⁴⁰ See T7-13 – 7-14.

¹⁴¹ See T7-14 to 7-15.

assumed that the left frontal lobe and the left occipital lobe there were areas of bruising or contusions thus she'd assumed there was evidence of what might be called contrecoup injuries and as well she relied upon the report that there were lacerations and contusions to the brain matter itself.

162. Further she confirmed that the evidence she'd given about ruptured bridging veins being the source of extra-axial bleeding was a reference to the subarachnoid haemorrhage and the subdural haemorrhages.
163. She confirmed that no one had identified torn or ruptured bridging vein in any of the assessments¹⁴² and in this context when asked that she'd relied upon Professor Lamont's view about what his interpretation of the source of bleeding she said that the main stream view is that blood collects in subdural spaces and in subarachnoid spaces and is derived from torn bridging veins.¹⁴³
164. She confirmed that her evidence concerning bleeding from torn bridging veins was based upon her own expertise in relation to understanding neuro-anatomy and the pathology that arises in traumatic contexts.¹⁴⁴
165. When cross examined she confirmed that there were other possible causes of subarachnoid haemorrhage other than torn bridging veins.¹⁴⁵
166. In cross examination she repeated her opinion that the subdural bleeding of the magnitude and distribution of the type that was found can only come from bridging veins.¹⁴⁶ However when further questioned she confirmed that subdural bleeding could arise from other causes or sources that were non traumatic.¹⁴⁷
167. She refuted however the suggestion that hypoxia could cause a subdural haemorrhage¹⁴⁸ and more she said there was no evidence that reperfusion had caused any damage to Matthew's brain.¹⁴⁹

¹⁴² T7-22 11.

¹⁴³ T7-22 110-15.

¹⁴⁴ T7-22 120.

¹⁴⁵ T7-22 143.

¹⁴⁶ T7-23 15-10.

¹⁴⁷ T7-23 140 – T7-24 117.

¹⁴⁸ T7-24 123.

168. Under questioning she agreed that subarachnoid haemorrhages can be a result of non-traumatic causes but she disagreed that a subarachnoid haemorrhage could result from either a primary or secondary cause from hypoxia or from raised intercranial pressure or from reperfusion.¹⁵⁰
169. She agreed that there were a number of things that can cause brain swelling including accidental causes and pathological processes which do not require any external cause.¹⁵¹
170. In cross examination she confirmed that her opinion that shaking may have caused impact damage to the brain drew upon the contrecoup presentation reported by Dr Lamont and her understanding off some of the literature in this field.¹⁵²
171. She confirmed that there was no direct evidence of any external impact in Matthew's case that produced any acceleration or deceleration¹⁵³ but she went on to say if there'd been an impact onto a surface that had some yield like a mattress or a sofa or a couch or something like that, that impact would not cause any visible injury but there is still an impact involved and its an acceleration and an internal mechanism can arise in that context.¹⁵⁴ She went on to say that if the surface was completely yielding it wouldn't cause a problem at all but if it had its limits to the extent to which it would yield then injuries might be produced as a product of the magnitude of force involved.¹⁵⁵
172. Dr Skellern conceded that there was no study or research that had been undertaken relying upon experiments with infants that demonstrated that the forces that she spoke of were caused by an impact onto a soft surface. She accepted that such studies as there were relied upon evidence gathered from anecdotal sources primarily confessional statements.¹⁵⁶

¹⁴⁹ T7-25 15.

¹⁵⁰ T7-26 130-40.

¹⁵¹ See generally T7-27.

¹⁵² See T7-30 135 – 7-31 112.

¹⁵³ T7-31 130-45.

¹⁵⁴ T7-31 135-40.

¹⁵⁵ T7-31 143-45. See further T7-32 11-11.

¹⁵⁶ See T7-32.

173. Dr Skellern acknowledged that her understanding of biomechanical research that had been conducted to ascertain the forces reduced by shaking was based upon a reading of her literature and that the theory of how it might explain intracranial bleeding with the absence of external marks was disputed in the literature.¹⁵⁷
174. Dr Skellern acknowledged that her evidence of hyperflexion and extension leading to internal brain injuries required movement beyond the natural range of motion of a neck.¹⁵⁸ With respect to her opinion that injury could be caused by the infant being thrown down onto a yielding surface she gave examples of a bed or a couch and said that that would not leave any external mark visible.¹⁵⁹
175. Dr Skellern said that in the shaking example the shaking could involve the external impact of chin to chest or occiput to the back but a shaking without chin to chest or occiput to back touching would still be sufficient hyper flexion and hyper extension beyond the normal which would move the brain inside back and forth.¹⁶⁰
176. Dr Skellern acknowledged that there have been recent studies of shaking scenarios where it has been demonstrated that there was corresponding injury to the body such as the ligaments in the neck, the vertebra and the muscles.¹⁶¹
177. Dr Skellern agreed that events such as an infant stopping breathing or limb stiffness or lip smacking or head shaking, or air gulping and eye rolling are behaviours which could be indicators of some type of a neurological disfunction in an infant and that they could also be indicators of behaviours that might be exhibited in a seizure¹⁶² but she did not believe that it was possible there was a non-traumatic cause to his collapse.

Expert evidence called by the defendant

¹⁵⁷ T7-40.

¹⁵⁸ T7-41.

¹⁵⁹ T7-42.

¹⁶⁰ T7-42 135-45.

¹⁶¹ T7-43 130 – 7-44 120.

¹⁶² T7-47 120-35.

178. **Dr Julie Mack** was called in the defendant's case. She is a Board Certified radiologist in the United States currently practicing at the Penn State Hershey Medical Centre in Hershey Pennsylvania. She obtained her certification as a radiologist in 1994 and received added qualifications in paediatric radiology in 1996. As part of a general radiology practice she practiced in the area of paediatric radiology for many years. She currently works part time as the director of Breast Imaging at the Hershey Medical Centre and also as a private consulting practice which is almost entirely paediatric. At one time in her career she practiced at a large 500 bed hospital in Lancaster in Pennsylvania where she was the paediatric radiologist on staff. One respect of her research over the years has been in the Amish and Mennonite communities who live in Lancaster. She has studied genetic disorders that can present with bleeding around the brain in children without trauma. The condition can affect adults as well as infants to bleed without trauma.¹⁶³
179. She gave evidence that she'd had the opportunity to look at and consider the same MRI images that Dr Lamont gave evidence about.
180. She was asked whether on her review of the MRI image as a whole she saw any evidence of soft tissue swelling outside the cranium. She said no scalp swelling was evident on any of the images she reviewed.
181. Nor were there any fractures to be seen in any area of the images.
182. She added that the images of the portion of the neck that were available did not show any damage to the soft tissue or ligaments or bone or cartilage of the neck.
183. She was asked about whether she saw in the MRI images any contusions or bruising or tears of the brain itself. She said that when she reviewed the MRI there was an area within the left occipital lobe that raised a concern that there may be some blood in the brain but she noted that in pathology there was no evidence of a haemorrhage to the brain in that area.

¹⁶³ See e.g. T8-6 I9.

184. Otherwise she saw nothing that suggested a contusion or bruising or tear to the brain itself.¹⁶⁴
185. She saw nothing that looked like a laceration to the brain nor did she see any area in the left frontal lobe or the area of the left occipital lobe which was consistent with a contrecoup type of injury.¹⁶⁵
186. Her evidence was that she did not see any signs of intraparenchymal bleeding or haemorrhage (bleeding in the substance of the brain) although she saw bleeding outside the brain.¹⁶⁶
187. She did not see any signs of torn bridging veins.¹⁶⁷
188. With respect to subarachnoid haemorrhaging Dr Mack said that it was not something specific to trauma, that subarachnoid haemorrhage could occur in all kinds of natural diseases. She said that subarachnoid haemorrhage could certainly occur with trauma but it was not specific for trauma.¹⁶⁸
189. With respect to subdural haemorrhaging she said that when she studied she was taught that subdural haemorrhaging could only come from bridging veins but her research indicates that there can be conditions that are non-traumatic which can result in subdural haemorrhaging.¹⁶⁹
190. With respect to the relationship between hypoxia and subarachnoid haemorrhaging she said that subarachnoid haemorrhaging was common in the setting of hypoxia.¹⁷⁰
191. With respect to the relationship between subdural haemorrhaging and hypoxia her opinion was that it would not occur in the setting of hypoxia alone but she referred to studies in the United Kingdom and she said that an association exists if

¹⁶⁴ See T8-8 140 – 8-9 113.

¹⁶⁵ T8-9 114-26.

¹⁶⁶ T8-9 135-40.

¹⁶⁷ T8-9 147.

¹⁶⁸ T8-11 120-23.

¹⁶⁹ T8-11 129-43.

¹⁷⁰ T8-11 147.

hypoxia is accompanied by increased pressure but she said the relationship is still not fully understood.¹⁷¹

192. In cross examination she agreed that a tense fontanelle is a clinical sign that can be associated with brain swelling and that the evidence of brain swelling was abnormal and that the brain was swollen.¹⁷²
193. When cross examined Dr Mack made the point that in respect of some of the imaging the pathologist would be in a better position to say whether there was an actual contusion or bleeding.¹⁷³
194. **Dr Ronald Auer** gave evidence in the defence case. He is currently employed as a neuropathologist in biopsy and autopsy pathology and he also supervises graduate students. He is qualified in medicine as a doctor and he is certified in neuropathology in Canada and the United States and has a PhD from Lund in Sweden where he studied brain damage. He has been practicing for 35 years. He has had experience in forensic neuropathology and also experience in paediatric autopsies. He has approximately 130 peer reviewed publications the majority of which have involved brain damage and has given evidence in cases in Canada, the United States, the United Kingdom, Germany, New Zealand and Australia.
195. As part of his training and gaining qualifications in neuropathology he has studied and looked into eye pathology.¹⁷⁴
196. Dr Auer was asked about bridging veins and where they were located anatomically within the brain. He said that bridging veins are above the tentorium which separates the forebrain from the cerebellum and there are six or so of them on either side. They transmit blood from the cerebrum to the dura traversing the subarachnoid space.¹⁷⁵ He was asked about the flexibility of bridging veins and he said that they can be stretched to many times their original length and are like an

¹⁷¹ T8-12 16-16.

¹⁷² T8-30.

¹⁷³ See e.g. T8-33 126; T8-34 11.

¹⁷⁴ See T9-5.

¹⁷⁵ T9-9 115.

elastic band. He said it's very difficult to snap them by stretching.¹⁷⁶ With respect to the dura he said it had two blood supplies, one is the venous outflow of the brain and it also has an arterial supply. He said that under microscopic examination the dura is riddled with vessels. He was asked to compare the appearance of the arachnoid with that of the dura. He said that the arachnoid is a thin membrane much like a spider web and it is very different from the dura which is very vascular and looks like a sheet of fibrous tissue.¹⁷⁷

197. Dr Auer was asked to assume that Matthew sustained a cardiorespiratory arrest at his home on the 3rd of November and that the arrest occurred approximately 13:43. He was asked about this. Dr Auer said that once the breathing became shallow and the blood was poorly oxygenated (evidence by his blue colour) the heart stopped beating because of its requirement for oxygen. Once that happened Matthew was suffering from not only respiratory arrest but also a cardiorespiratory arrest and within about 10 minutes his brain would undergo brain death if circulation isn't immediately restored within 10 to 15 minutes.¹⁷⁸
198. He was asked about the efficacy of CPR and he said that attempts to press the heart against the spine during resuscitation can deliver some blood to the brain but its usually a trickle of blood compared to a beating heart.¹⁷⁹ Dr Auer said that the brain needs oxygen combined with glucose and that when ischemia happens and oxygen stops being delivered the used blood stops being removed ischemia can be potent in causing brain damage. He explained that once the circulation to the brain stops the cell lining of the blood vessels see the stoppage of blood flow first and they begin to leak.
199. Dr Auer explained¹⁸⁰ that oedema is an accumulation of water in the tissue that will begin with cardiac arrest. The initial oedema occurs around blood vessels and closes them without giving a big increase in brain weight. Brain swelling occurs immediately upon leakage when the heart stops because the walls of the blood vessels experience a stoppage of flow first. He was asked about the concepts of

¹⁷⁶ T9-9 130-35.

¹⁷⁷ T9-10 110.

¹⁷⁸ See T9-10 145.

¹⁷⁹ T9-11 113.

¹⁸⁰ T9-14 – T9-15.

reperfusion and reperfusion injury. Dr Auer explained that they're common in stroke and ischemia research. They occur when the blood flow is interrupted to a part of the brain when the perfusion of that part of the brain will often leak fluid and blood into a stroke. He said that if the whole of the brain is ischemic as in Matthew the blood can only go around the brain but if a part of the brain is ischemic and the clot fragments then a little part of the brain can be reperfused and the blood cells will go across the leaking vessels. Dr Auer said that he was able to see in the digitalised copies of the histology tissue samples taken by Dr TE Robertson a non-perfused brain but a perfused upper spinal cord.¹⁸¹ He said he was able to see the junction between the perfused brain and the non-perfused brain at the very upper reaches of the spinal cord.

200. With respect to subarachnoid haemorrhages generally Dr Auer said that they were not specific to trauma. He said that it is seen in baby deaths where there are agonal respirations which is when ventilation is insufficient to allow the heart to pump with the force and rate of contraction that it's used to and the vessels dilate because of hypoxia and ischemia.¹⁸²
201. With respect to subdural haemorrhaging and subdural bleeding Dr Auer said it was not specific to trauma. He said that it could occur when circulation is restarted after a hypoxic event and cardiac arrest. The dura is hyperperfused and blood is rerouted through the dura.¹⁸³
202. Dr Auer explained that hypoxia may lead to subdural bleeding because when the dura is reperfused it leaks and the spongy vessels in the dura leak and the blood can't go epidurally but goes subdurally.¹⁸⁴ Dr Auer referred to the evidence of Dr Gole and his evidence that retinal haemorrhages were present in Matthew's eyes and also the presence of retinoschisis as well as a macular fold. Dr Auer said that those phenomena were not specific to trauma.¹⁸⁵ He went on to explain why in his opinion both injuries could occur absent of traumatic event.¹⁸⁶

¹⁸¹ T9-15 12.

¹⁸² T9-19 18-24.

¹⁸³ T9-19 134.

¹⁸⁴ T9-19 145 – T9-20 15.

¹⁸⁵ T9-21 114.

¹⁸⁶ T9-21 118 – T9-22 120.

203. Dr Auer took issue with Dr Gole's evidence concerning the vitreoretinal traction mechanism for the explanation as to how these three phenomenon or injuries could occur. He said that the proposed mechanism was a guess or a hypothesis because its not possible for the vitreous to get an anchor in the retina and pull on it with traction.¹⁸⁷
204. Dr Auer was told of the evidence from Mrs Baxter of observations of Matthew gulping air and smacking his lips, stiffening his limbs and eye rolling as well as some occasions when he stopped breathing for a moment. Dr Auer said that they had potential significance as they may indicate he was suffering hypoxic seizures.¹⁸⁸
205. To the same effect he said that the evidence of Matthew shaking his head back and forth may indicate a hypoxic seizure. He said that it could indicate a sick baby although he said that he would have to see it ideally and to have an electrical recording of the baby's scalp but it most certainly appeared an abnormal baby.¹⁸⁹ Dr Auer went on to explain how a hypoxic seizure occurs, how it presents itself and why its consistent with some of the physical actions of Matthew as described by his mother.¹⁹⁰
206. Dr Auer disagreed with the opinion evidence of Dr Skellern that throwing an infant of Matthew's age down on to a soft or yielding surface could produce the forces necessary to cause the injuries she spoke of to Matthew's brain and eyes yet leave no external indication of force of trauma. He said that the scenarios spoken of by Dr Skellern are insufficient to produce the acceleration and deceleration of the forces she spoke of.¹⁹¹
207. Dr Auer also disagreed with Dr Skellern's evidence that a shaking of the head back and forward in either scenario (whether the chin hit the chest or not) or in the scenario where there was no striking of chin to chest or occiput back and forth. He said that that could not cause the intercranial bleeding or the eye findings seen in

¹⁸⁷ See e.g. T9-22 130-43.

¹⁸⁸ See T9-23 128-39.

¹⁸⁹ T9-23 141 – T9-24 13.

¹⁹⁰ See T9-24 14-43.

¹⁹¹ See e.g. T9-25 18 – T9-26 142.

this case.¹⁹² Dr Auer also disagreed with the evidence that there had been a contrecoup injury in this case.¹⁹³

208. In cross examination Dr Auer maintained his evidence that shaking could not generate the forces sufficient to rupture bridging veins after being stretched.¹⁹⁴
209. Dr Auer agreed that sucking and swallowing reflex can be natural for babies as well as gulping. He further agreed that lip smacking could be part of the sucking and swallowing reflex and a baby shaking its head could be an involuntary action. He also agreed it was not unusual for babies to shake their heads or sometimes to hold their breath.¹⁹⁵
210. Dr Auer defended his capacity to give expert evidence concerning Matthew's eye conditions based on his study of the pathology of the eye within his specialty as a neuropathologist.¹⁹⁶

Exhibit 32

211. Without objection from the Crown the defence tendered into evidence a transcript of the evidence given at the first trial by Dr Chris Van Ee.¹⁹⁷ Dr Van Ee is a biomechanical and mechanical engineer and holds a position as an ad hoc professor at Wayne State University in the department of biomedical engineering. He holds a PHD qualification in biomedical engineering from Duke University which is the application of physics and engineering principles to medicine. One of the focuses of his work and research is biomechanics and within that he studies the effects of impact upon anatomical structures or structures of the body.
212. Within the focus of his research and consulting work he has studied impact biomechanics and undertaken research in head trauma. He has studied head injuries in both adults and children including things like ballistic trauma for

¹⁹² T9-26 115-43.

¹⁹³ T9-27 12-13.

¹⁹⁴ T9-31 110.

¹⁹⁵ T9-31 136 – T9-32 130.

¹⁹⁶ See T9-37.

¹⁹⁷ See Ex 32.

example with respect to crowd control and the use of rubber bullets or projectiles he studied the forces necessary to cause skull fractures.

213. Within his field of discipline he's studied the mechanism of shaking an infant and any resultant types of injury. He said that he'd been asked to provide an opinion about the scientific basis for shaken baby syndrome from a biomechanics perspective but that he had not undertaken the specific task of reviewing the particular case of Matthew's injuries.
214. He said that in the past he had published in peer review publications results of research in this area.
215. Dr Van Ee said that he'd studied events such as car crashes and video taped accidents in an attempt to understand what happens to a child when such events occur. The study involves attempting to reproduce the motions of what's happened using a tool such as crash test dummies or using computer models.
216. He said that in relation to the concept of a "shaken baby" the classical explanation associated with this phenomenon is the acceleration of the brain, a rotational acceleration, that rips bridging veins and gives rise to bleeding on the surface of the brain. He said the mechanism that it suggested is that a shaking back and forth of an infant produces acceleration and deceleration forces which lead to damage within structures inside an infant's brain. To similar effect he understood that such an action upon an infant was said to be associated with retinal and eye damage.
217. He acknowledged that one of the difficulties in studying such an hypothesis and testing the theory is that for obvious reasons it was impossible to conduct any studies upon actual infants.
218. Dr Van Ee said that however there was no data to support that the injuries mentioned, from a biomedical perspective, happened in the way postulated by those who advocate the shaking baby hypothesis. He said there is not a mechanism that can explain it because one would expect such forces would cause injuries to the neck but these are not demonstrated necessarily.

219. Dr Van Ee said that one study in a journal of neurosurgery found that a shaking produces a level of head acceleration below what occurs when a head hits a hard surface after a fall of one foot in height. Yet it is understood that such a fall would not necessarily cause damage to the brain.
220. Dr Van Ee said that in his opinion despite what research has been undertaken in the field of biomechanics it is still not known if shaking can or cannot produce the injuries that are said to be associated with such a mechanism.

The rival submissions

221. Both the Crown and the defendant relied upon lengthy and detailed written submissions.¹⁹⁸ Because of their length and detail I shall not attempt to set out the arguments and submissions at length, the outlines form a part of the court records. Rather to the extent necessary I will refer to the substance of the rival submissions below and in my discussion of the issues. Both Mr Rees and Mr Crowley QC addressed me in support of their respective contentions.¹⁹⁹ For the Crown Mr Rees relied largely upon his written submissions and addressed me primarily to meet the thrust of the lengthy oral submissions for the defence by Mr Crowley.
222. Mr Rees acknowledged that the Crown case was circumstantial and relied “primarily” on expert testimony.²⁰⁰ He emphasised that Matthew presented as a healthy infant, without any suggestion from those who saw or examined or treated him that he was suffering from any illness or underlying condition until the emergency of 3 November 2011.²⁰¹ He pointed to the evidence that the defendant

¹⁹⁸ See MFI K (Crown) and MFI L (Defence).

¹⁹⁹ See T10-6 15 ff.

²⁰⁰ MFI K at p. 1.

²⁰¹ See Admissions (EX 1), at [18] above and MFI K p. 1-3.

was caring for Matthew, unsupervised on 3 November and had the opportunity to harm Matthew.

223. In support of the Crown case that Matthew died as a consequence of an act or acts by the defendant²⁰² Mr Rees expressly relied upon the opinion evidence of Dr Lamont and Dr Skellern. He emphasised that by reason of their experience in dealing with paediatric emergencies and deaths they had greater experience than the other experts where trauma may be suspected or proven.²⁰³ He submitted that the subject matter of their opinions drew upon a body of knowledge and experience that was organised and recognised and accepted as reliable so that in the circumstances their opinions were of value in resolving the issues.²⁰⁴
224. In what follows, concerning the evidence and the discussion, it proceeds upon the particularised Crown case that the injuries that caused Matthew's death were caused by a non-accidental trauma either by a violent shaking or by being thrown down onto a soft and yielding surface.²⁰⁵ It may be observed at this stage that the specification of a sufficiently soft and yielding surface if Matthew were to have been thrown down was "dictated" by the overwhelming evidence that Matthew bore no signs or marks of any suspicious trauma.
225. In oral submissions Mr Rees expressly took me to the evidence of Dr Skellern (T7-8 through to T7-10 l30) in support of her experience and her opinion as to how Matthew sustained an injury that resulted in his death. He reminded me that her evidence was that torn bridging veins in the brain might leak blood irritating the brain and set in train a sequence of events causing the cardiorespiratory event that caused Matthew's death. She said that being thrown down onto a firm but yielding surface or being shaken might cause the stretching and ultimately tearing of these bridging veins.²⁰⁶ Evidence to a similar effect was given by Dr Lamont.²⁰⁷

²⁰² See [19] above.

²⁰³ T10-43 l36-39.

²⁰⁴ See *R v Bonython* [1984] 38 SASR 45, per King CJ at [46]-[47].

²⁰⁵ See MFI K at para 105; see also T1-14 l6-29.

²⁰⁶ See T7-8 l44 – T7-9 l6.

²⁰⁷ See MFI K at p. 18 para 101 and p. 19 para 105.

226. In both oral and written submissions Mr Rees submitted that support for the opinions of Doctors Lamont and Skellern could be found in the evidence of Dr Guazzo and Dr Gole. Certainly Dr Guazzo, who impressed me as an experienced specialist neurosurgeon and as a careful and reflective witness, expressed the opinion that Matthew had suffered trauma. But he was not asked and did not venture any opinion describing the act or acts whereby the trauma might have been inflicted. Dr Gole's evidence falls into a different category. He did not offer an opinion about the cardiorespiratory arrest and subsequent death of Matthew. As a specialist paediatric ophthalmologist his evidence was confined to the cause of the retinal and other damage to Matthew's eyes. His evidence was admissible not to the cause of Matthew's death but in support of the opinion that sometime before death Matthew had been subjected to the shearing forces that Doctors Lamont and Skellern spoke of. In this context mention might also be made of the evidence of the pathologist who conducted the post-mortem examination of Matthew Dr David Williams. He expressed the opinion that Matthew had sustained a "serious assault" to his head.²⁰⁸ This however does not shed light onto the nature of the act or acts that were done to cause death. In any event I have reservations about the reliability of Dr Williams evidence because of some inconsistency between his evidence at the first trial and the second trial.²⁰⁹ It is evident that unrelated health complications in the interval may have affected his memory.²¹⁰
227. Thus the Crown case depends, for proof (beyond reasonable doubt) of a non-accidental act or acts by Mr Baxter, upon the opinion evidence of Doctors Lamont and Skellern. Only they offer any evidence identifying the act or acts that may have been done or inflicted by Mr Baxter upon his son that may have set in train the consequential changes within his skull that caused death.

An objection to the evidence of Dr Lamont and Dr Skellern

²⁰⁸ See [58] above.

²⁰⁹ See [60] above.

²¹⁰ See [61] above.

228. It is convenient at this stage to consider an objection raised by the defence to the opinion evidence. The legal basis of the objection was expressed as follows:²¹¹

“15. An expert may, within their specialised knowledge, consider whether a hypothesis is consistent with ‘known facts’, so long as those ‘known facts’ are established by evidence. If those ‘known facts’ are not so established then the opinion is an impermissible inference drawn by that expert. The principle about impermissible speculation was stated by Redlich JA (with whom the other members of the Victorian Court of Appeal agreed) in *R v Berry* that:

“...an expert will not ordinarily be permitted to speculate as to inferences when there is no evidence that could support such an inference. Where there is such evidence, the expert may testify that such circumstances are consistent with such an explanation. Thus, an expert may be invited to consider whether a hypothesis is consistent with the known facts, so long as the hypothesis is sought to be drawn from facts which may be established by the evidence and the assessment of such facts is within the witness’s expertise.”

The observation by Redlich JA is well established.²¹²

229. Concerning Dr Lamont’s evidence it will be recalled that he expressed the opinion more than once that aspects of the presentation of the brain in the MRI images was consistent with the application of trauma. For example in respect of the bleeding to the brain stem that it was due to impact or twisting forces.²¹³ Further in relation to what he identified as a “contrecoup” injury that there could be two applications of force or maybe one complex application of force.²¹⁴ And when taken to the injuries, the bleeding and the swelling he identified he agreed it was consistent with trauma saying he couldn’t think it could be consistent with anything else.²¹⁵

230. The trauma he postulated in turn produced shearing forces within the brain which caused injury and bleeding.²¹⁶

²¹¹ See MFI L at para 15.

²¹² See *R v Baden-Clay* [2014] QSC 156 at [37] and [38] per Applegarth J.

²¹³ See [129] above.

²¹⁴ See [132] and [134] above.

²¹⁵ See [136] above.

²¹⁶ T3-13 l36.

231. Under careful cross examination by Mr Crowley QC Dr Lamont accepted (correctly) that his interpretation of the MRI images involved inferential reasoning.²¹⁷ In this case the particular process of inferential reasoning was exposed with some precision.²¹⁸

“Just pardon me, doctor. Now, doctor, you gave some evidence last week about the cause of the swelling here, and your evidence, as I understand it, was to the effect that you said it was almost certainly the case that the bleeding would have occurred first, and that that would then have led to an irritation of the brain, which then in turn has caused the swelling. Do you recall giving that sequence of evidence?---I do, yes.

Now, that sequence, that’s an example, isn’t it, of you drawing a number of inferences which altogether are a chain of inferences. Do you agree?---Correct.

What sits behind this in terms of the series of inferences is, first of all, in your other part of your evidence you refer to there being some shearing forces which may have been operating?---Yes.

That’s the first inference, agree?—Yes. Yes.

The second level, then, is that those shearing forces have acted in a way that has ruptured or torn a bridging vein?---Yes.

The next inference is, it’s the bridging vein that’s been torn which has led to the bleeding?---Correct.

And then the bleeding has occupied an area sitting on top of the brain?---Yes.

Which would be in the subarachnoid space?---Yes.

Can’t be in the subdural space?---Correct.

Because subdural is not going to – that blood won’t touch the brain, because you’ve got the arachnoid membrane?---Yes.

That blood sitting in the subarachnoid space has irritated the brain. That’s the next inference?---Yes.

And in response to that insult, the brain has then swollen up. That’s the final step in the chain?---yep.”

232. In this context Dr Lamont accepted that if any of the inferences were not accurate then logically it would follow that his conclusion would not follow.²¹⁹ He also

²¹⁷ See T6-14 11-19.

²¹⁸ T6-18 17-41.

²¹⁹ See MFI L at para 19; see also T6-19 15-15.

acknowledged that his opinions or interpretations of the MRI images should be capable of being confirmed by pathology.²²⁰

233. It will be recalled that Dr Skellern gave evidence that the injuries revealed by the MRI images were caused by trauma involving torn bridging veins.²²¹ Her evidence was that the injuries revealed by the MRI images were consistent with being caused by Matthew being either thrown onto a yielding surface or by shaking.²²² Her opinion evidence concerning the sequence of events being consistent with the inferential reasoning of Dr Lamont quoted above.²²³
234. Dr Skellern confirmed that she adopted the report by Dr Lamont for the purposes of her evidence.²²⁴ In particular she assumed a contrecoup injury based upon Dr Lamont's opinion.²²⁵ However her inference that bridging veins had been torn was based upon her own understanding of anatomy and pathology.²²⁶
235. Thus it is apparent that the expert testimony of both Dr Lamont and Dr Skellern about the cause of Matthew's collapse and death is entirely inferential proceeding upon the hypothesis that a traumatic act, being either a throw down or a shaking as described, produced shearing forces²²⁷ which in turn caused a tearing of bridging veins which in turn caused bleeding and an irritation of the brain causing it to swell.
236. But there are some powerful objections to this hypothesis that emerged in evidence. The first is that Dr Lamont was unable to identify a torn bridging vein (or some source of bleeding).²²⁸ Nor could Dr Skellern.²²⁹ The explanation for this may have something to do with the limitations of MRI technology and inherent difficulties in interpretation of the images created.²³⁰

²²⁰ See T7-8 13-8 and 115-25.

²²¹ See MFI L at para 19.

²²² See T7-7 135 – T7-9 145.

²²³ See [234] above.

²²⁴ T7-16 120-25.

²²⁵ T7-21 11-12.

²²⁶ T7-22 15-20.

²²⁷ See Dr Lamont at T3-13 136 for example.

²²⁸ T3-13 112-30; T6-19 117-22.

²²⁹ T7-22 11-3.

²³⁰ Consider Dr Lamont's attempt to explain the physics behind MRI imaging at T3-8 to T3-9.

237. More specifically in this context is the evidence of Dr TE Robertson.²³¹ He is an experienced neuropathologist who examined Matthew's brain. He examined the brain both macroscopically (with his eyes) and microscopically. Of particular relevance in this context he said that upon examination:²³²

- (a) There was no evidence of bruising or contusion within the brain itself;
- (b) There was no evidence of any tears within the brain;
- (c) There was no evidence of any laceration to the brain;
- (d) Apart from what appeared to be ischemic damage there was no evidence of any haemorrhage within the brain;
- (e) There was no evidence of any torn bridging vein or venous source either on the surface or localised subarachnoid haemorrhage.

238. The evidence of Dr TE Robertson contradicts Dr Lamont's evidence in important respects. Notably his evidence contradicts Dr Lamont's evidence of a contrecoup injury. More significantly in this context it contradicts Dr Lamont's hypothesis of torn bridging veins²³³ which is an essential inference to his hypothesis as explained under cross examination.

239. When pressed in cross examination Dr Lamont was driven to make the observation that sometimes pathologists are wrong and radiologists correct.²³⁴ That may be so but it is not a rebuttal of Dr Robertson's findings as explained in his evidence.

240. The third objection to the hypothesis, as I have called it, comes from Dr Mack who was a radiologist who gave evidence in the defendant's case. Her

²³¹ T4-16 145 ff. See also at [70] – [95] above.

²³² T4-28 120 – T4-29 117.

²³³ See [132] and [139] above.

²³⁴ T6-24 115-21.

interpretation of the MRI images is consistent with Dr TE Robertson's findings²³⁵ which I summarised. Among her findings were that the MRI images did not reveal contrecoup injuries²³⁶ nor were there any signs of torn bridging veins.²³⁷

241. Dr TE Robertson impressed me as an experienced pathologist who was careful and within his discipline thorough. I accept his evidence generally and in particular that there were no torn bridging veins to be seen upon examination of Matthew's brain.
242. I also accept the evidence of Dr Mack concerning her interpretation of the MRI imaging²³⁸ insofar as it is supported by Dr TE Robertson's finding. While there may be some force in the submission by the Crown that Dr Lamont has more experience as a paediatric radiologist than Dr Mack in important respects her evidence is consistent with the findings of the neuropathology examination and preferable to Dr Lamont's interpretation.
243. There is another reason for my preference for the evidence of Dr TE Robertson to that of Dr Lamont. The MRI technology is complicated and difficult to explain.²³⁹ But the resultant images are a reconstruction of features of the anatomy to be found, in this case, within the skull and brain of the infant Matthew. This reconstruction is not an image such as maybe reflected by a mirror or captured in a photograph. Within the limitations of our understanding of science and technology the reconstructed images require interpretation. Hence the reliance of the Courts upon the expert evidence of physicians to explain, or attempt to explain, the significance of the dark, the light and the shade to be seen. There is also the possibility of artifact limiting the reliability of an image. In contrast a pathologist such as Dr TE Robertson examines the brain itself. The pathologist has an advantage over a radiologist, he or she, has an opportunity to examine and consider the organ or tissue in question.

²³⁵ See [33] above and Dr Mack's evidence at T8-8 and T8-9.

²³⁶ T8-9 120-25.

²³⁷ T8-9 140-47.

²³⁸ E.g. at T8-8 and T8-9.

²³⁹ Consider T3-8 135 – T3-9 130.

244. The best evidence rule came to effect in 1744 following the statement of Lord Hardwicke in *Omychund v Barker*: “the judges and sages of the law have laid it down that there is but one general rule of evidence, the best that the nature of the case will allow.”²⁴⁰ Whilst modern law of evidence has actively retreated from the inclusionary and exclusionary effects of the best evidence rule, the High Court has declared the rule not completely fallen into desuetude.
245. Their Honors Gummow, Callinan and Crennan JJ acknowledged that:
- “Subject to the exigencies of litigation, the circumstances of the parties, and the other settled and statutory rules of evidence, it has vitality. An aspect of the rule is that courts should act upon the least speculative and most current admissible evidence available.”²⁴¹
246. Dr TE Robertson conducted a physical examination of Matthew’s brain. His findings and observations should be considered the least speculative and the “best evidence”.
247. I find that there were no torn bridging veins within Matthew’s brain. The evidence does not support that fact. Any postulation of a torn vein is unsupported speculation. An essential step in the inferential reasoning of both Doctors Lamont and Skellern cannot be proven and their hypothesis that Matthew’s collapse and death was the product of the traumatic acts they postulate ultimately has no support in fact.
248. In the preceding paragraph I included reference to Dr Skellern. As I have explained her hypothesis rests upon the existence of torn bridging veins. Her opinion about the cause of Matthew’s collapse and death rests upon the same unsubstantiated assumption as that of Dr Lamont. The objection to the admissibility of their evidence should be upheld.

A further objection to evidence

²⁴⁰ (1744) 26 ER 15, 33.

²⁴¹ *Golden Eagle International Trading Pty Ltd v Zhang* (2007) CLR 498 at [4].

249. There is one other objection to evidence made by the defence which it is convenient to consider now. In examination in chief Mr Rees asked Dr Lamont “what would come first bleeding or swelling” to which he responded²⁴²

“Almost certainly the bleeding would come first. We’ve got two things here, bleeding and swelling together. You can get a swollen brain if the brain has been short – very short of oxygen. In a drowning for example the brain will swell. And there are other causes of swollen brain. But here we have the bleeding as well. And almost certainly what’s happened is that the blood has irritated the surface of the brain. The brain does not like having blood in contact with it. So it’s irritated the surface of the brain and caused the swelling. In addition to that as you will see from other scans, there was bleeding inside the brain and that in itself would cause brain swelling. So you’ve got ... a primary insult and a secondary insult. The swelling, I think, is secondary to the primary cause.”

Objection is taken that the opinion evidence is beyond the doctor’s specialty as a radiologist which is the interpretation of scans and imaging, in this case of MRI images. No part of the doctor’s answer relied upon an interpretation of an image. His opinion, being concerned with a matter of physiology and the cause of anatomical features falls outside his specialist expertise. I uphold the objection.

Some miscellaneous issues

250. Before considering the implications of my ruling upon the evidence of Dr Lamont and Dr Skellern I should address a number of issues that were raised in submission.
251. In written submissions²⁴³ Mr Crowley QC objected to evidence of Mr Baxter’s demeanour arising from some questions asked of the neonatal nurse Ms Conroy.²⁴⁴ Objection was taken at trial and I was inclined to uphold the objection. The Crown did not press the admission of this evidence and I uphold the objection.
252. In his written submissions Mr Rees pressed what he submitted were inconsistent versions given by Mr Baxter when various telephone conversations and conversations with paramedics, nurses and doctors on the day of Matthew’s

²⁴² T3-15 111-23.

²⁴³ MFI L at para 27.

²⁴⁴ See T2-5 129 and T2-6 117.

collapse and admission to hospital.²⁴⁵ In oral submissions²⁴⁶ Mr Rees was at pains to make it clear he was not relying upon an “Edwards Lie”.²⁴⁷ Rather he submitted that the inconsistencies, if that is what they are, go to credit and particularly the reliability of Mr Baxter’s account to people. For my part I have difficulty in giving any particular significance to this evidence. Putting aside the recording of the telephone conversations the conversations occurred almost 10 years ago. They occurred in the context of a medical emergency. There is a reason to doubt the reliability or the recollection of conversations in these circumstances. Further I cannot rule out the effect of panic or confusion affecting Mr Baxter’s understanding of what was being asked of him. The confusion in Dr O’Kane’s evidence between his recollection and what he said on a different occasion about a “high chair”²⁴⁸ demonstrates my point. Dr O’Kane impressed as a competent specialist whose evidence was otherwise reliable. I reject the Crown submission that inconsistencies affect the credit of Mr Baxter. In the context of my consideration of the credit of Mr Baxter in my ruling I have not overlooked the unchallenged evidence of his good character coming from a number of sources including his wife.²⁴⁹

253. There is an error in the defence written outline (MFI L) at para 134 which should be clarified at this juncture. I raised it with counsel in address²⁵⁰ and ultimately counsel accepted the point. In the written outline counsel submitted,²⁵¹

“A subdural haemorrhage is not a specific finding for trauma. As Dr TE Robertson confirmed – in his opinion both trauma and hypoxic ischaemic injury were possible causes that come into play in this case.”

In the footnoted passage referred to by counsel in support of the proposition²⁵² the evidence of Dr TE Robertson was accurately quoted but in context he was not referring to a subdural haemorrhage. In context his statement was referring to what he said at transcript T4-18 136-41 that both trauma and hypoxic ischaemic

²⁴⁵ See MFI K at para 13 – para 28.

²⁴⁶ See T10-44 19-16.

²⁴⁷ See in this context Queensland Supreme & District Courts Bench Book at 39.1.

²⁴⁸ T1-84 126. See further T1-88 140 – T1-99 121.

²⁴⁹ See MFI L at para 212 for a summary of the evidence. See also Ex 32.

²⁵⁰ T10-4 133 – T10-5 127.

²⁵¹ MFI L at para 134.

²⁵² See T4-21 113-15.

injury could be causes of brain swelling. In order to understand this evidence it must be recalled that Dr TE Robertson gave evidence that ischaemic damage is caused when a brain does not have enough blood or oxygen.²⁵³ He agreed that a subarachnoid haemorrhage might be caused by trauma or by a hypoxic ischaemic injury.²⁵⁴ It will be recalled that Dr TE Robertson noted diffuse hypoxic ischaemic encephalopathy in the brain and brain stem ²⁵⁵ and the “hypoxic ischaemic presentation of the brain”.²⁵⁶

Earlier I referred to the evidence of Dr Gole who is an experienced paediatric ophthalmologist. His evidence did not concern the cause of Matthew’s cardiorespiratory collapse or death. His evidence had limited relevance. He had examined the images that had been taken of both Matthew’s eyes after admission but before his life support was turned off. He identified retinal damage haemorrhages and other pathology within both eyes that he said was consistent with being a consequence of shaking the head to and fro or from impact of the head against a surface.²⁵⁷ Dr Gole said that the pathology he saw in the images of Matthew’s eyes were consistent with injuries noted after a high speed impact accident such as a motor vehicle accident or a fall from a height. He was cross examined about the findings of a pathologist, Lantz, who reported eye injuries in different accidents that did not involve high speed.²⁵⁸ In this context I note the evidence of Dr Ronald Auer who is a highly qualified neuropathologist called by the defendant. Part of his evidence was directed to Dr Gole’s hypothesis. I was impressed by Dr Gole as a widely read specialist in paediatric ophthalmology. In this context I prefer the evidence of Dr Gole to that of Dr Auer relating to Matthew’s eye pathology. But the cross examination of Dr Gole reveals that the literature in his field of expertise relating to physical causes of this “traumatic eye pathology” in infants is in a state of some flux. It concerns me that the expert thinking in this field is not settled.

The prosecution case - discussion

²⁵³ T4-18 117.

²⁵⁴ T4-22 125.

²⁵⁵ T4-23 12-11.

²⁵⁶ T4-29 120.

²⁵⁷ See above at [108].

²⁵⁸ See T5-38 145 to T5-47 18. See also defence outline MFI L at para 156 and 157.

254. My upholding the objection to the evidence of Dr Lamont and Dr Skellern is fatal to the prosecution case but in case error is detected in my finding and out of respect to the detailed submissions to me I should make some observations and findings.

255. The prosecution case relies upon a series of steps or links each one being necessary to establish that case.²⁵⁹ This is best demonstrated from the evidence of Dr Lamont quoted above and Dr Skellern²⁶⁰ some of which I quoted above²⁶¹ and other parts can be seen quoted in the submissions MFI K and MFI L. The written submissions of the defence eloquently make the point:²⁶²

“35. A related aspect of the nature of the Prosecution case is an assessment of the “links” in the Prosecution’s chain of reasoning along its pathway to conviction. The Prosecution case rests on a disjunctive set of particulars in respect of the purported mechanism of injury which allegedly occasioned the traumatic injuries on 3 November 2011. The evidence of Dr Skellern ties the Prosecution to three possible mechanisms, namely:

- a. Impact on a soft surface (such by a forceful throw onto a mattress, sofa or couch); or
- b. Shaking with hyperflexion and hyperextension of the neck, resulting in an external impact of chin-chest and occiput (back of head) to back, which is said to cause a corresponding internal impact of the brain to the front and back of the inside of the cranium (*coup-contrecoup* injury); or
- c. Shaking with the same type of hyperflexion and hyperextending of the neck beyond the “normal range”, without any external impact, but which is said to nevertheless cause a corresponding internal impact of the brain to the front and back of the inside of the cranium (*coup-contrecoup* injury).

36. Those three mechanisms can then be assessed against the “links in the Prosecution’s chain of reasoning” which include that:

- a. Matthew had both subdural and subarachnoid haemorrhages; and

²⁵⁹ See [231] to [235] above.

²⁶⁰ See at [147] above.

²⁶¹ See T7-29 I39-47; T7-30 I35 to T7-31 I47; T7-41 I38 – T7-43 I10.

²⁶² See MFI L at paras 35, 36 and 37.

- b. subdural and subarachnoid haemorrhages are caused by bleeding between the dura and the arachnoid membranes and bleeding into the arachnoid space respectively; and
 - c. the source of such bleeding is (or at least can be) from a ruptured bridging vein; and
 - d. a bridging vein may stretch, tear and rupture through trauma involving shearing forces produced by the generation of angular acceleration-deceleration forces that operate upon the brain; and
 - e. the same shearing forces can also cause injury to the brain itself or to the brain stem; and
 - f. such shearing forces/angular acceleration-deceleration forces are (or at least can be) produced by one of the three suggested impact/shaking mechanisms postulated by Dr Skellern; and therefore
 - g. the source of the identified subdural and subarachnoid haemorrhages was a bridging vein that was stretched, torn and ruptured through some act or event that involved trauma, necessarily produced through one of the three proposed mechanisms on 3 November 2011.
37. From those “links” it is possible to identify the “intermediate facts” which are indispensable steps or links upon the way to an inference of guilt and must be proven beyond reasonable doubt:
- a. First, the supposed existence of a torn bridging vein is an essential inferred fact that must be established in order for the Prosecution to be able to prove its theory of trauma beyond reasonable doubt;
 - b. Second, proof of at least one of the three proposed mechanisms is an indispensable link in the drawing of the inference that Mr Baxter unlawfully killed his son Matthew, and it follows therefore that it must be established beyond reasonable doubt that at least one of the proposed mechanisms has the capacity to cause the alleged abusive head trauma injuries;
 - c. Third, if one or any of the proposed mechanisms are capable of causing the alleged abusive head trauma injuries, then it must be established beyond reasonable doubt that the medical findings as to the cause of death occurred as a result of an abusive head trauma event which was an ‘act’ that involved at least one of the mechanisms of shaking/impact described by Dr Skellern.”

My finding that there were no torn bridging veins within Matthew’s brain is contrary to one of the essential links in the circumstantial case propounded by the

Crown. It is trite law that each link in such a circumstantial case must be proven beyond reasonable doubt.²⁶³

256. For the reasons I have given in my discussion of the objection to the admissibility of the evidence of Doctors Lamont and Skellern I prefer the evidence of Dr TE Robertson and Dr Mack to the evidence of Dr Lamont. I reject his evidence and that of Dr Skellern in this case because their opinions rely heavily on falsified assumptions.
257. The prosecution must prove the charge of manslaughter beyond reasonable doubt. The onus is on the prosecution and remains on it. Hence it must prove beyond reasonable doubt that Mr Baxter caused Matthew's death. Satisfaction of guilt beyond reasonable doubt must be based upon evidentiary proof to the required standard not upon speculation. Specifically in this case the Crown must negative beyond reasonable doubt the matters raised by s 23(1)(b) of the Criminal Code.
258. Proof of the eye injuries or pathology does not prove how or by what act or by whom Matthew died. The retinal and other pathology played no role in causing Matthew's cardiorespiratory failure and death. In the state of the evidence it can only be a matter of speculation to propose that the one and the same act (or acts) caused both the eye pathology and the cardiorespiratory collapse.
259. The prosecution case relies heavily upon the opportunity Mr Baxter had in the morning up to 1:35pm on 3 November 2011 when he was unsupervised.²⁶⁴ But the defence can point to²⁶⁵ a body of evidence from a number of specialist witnesses that the bleeding and eye injuries could have occurred as early as 1 November 2011.
260. The evidence from the admissions and from Mrs Baxter suggest to me that Matthew was a normal and essentially healthy and well-nourished infant. Mrs Baxter's pregnancy and delivery were relatively routine and uncomplicated. Whenever Matthew was examined by doctors or nurses either before or after his

²⁶³ *Shepherd v The Queen* (1990) 170 CLR 573 at 583.

²⁶⁴ See MFI K at p.3.

²⁶⁵ See MFI L para 194 to para 207.

collapse no abnormal marks or signs of injury or bites or stings were seen. I do not accept Dr Williams' evidence that what he saw at the autopsy were consistent with bruises or bruising marks. His evidence runs contrary to the evidence of so many careful and competent doctors and nurses who thoroughly examined Matthew upon admission whilst he was treated before his death. The evidence of Dr Alcock (who impressed me as an experienced, thoughtful and thorough physician), and Dr JD Robertson is highly persuasive that Matthew was not suffering from any underlying or untreated illness or condition. I reject Dr Auer's opinion that Matthew was suffering from a serious undiagnosed condition, based upon the events or observations Mrs Baxter spoke of. The matters or circumstances he was told about seem to me to be footling or inconsequential.

261. Nevertheless what caused Matthew's cardiorespiratory collapse and death remains a matter of speculation. The law requires on a charge of manslaughter proof beyond reasonable doubt based upon probative admissible evidence. For the reasons I have given proof to that standard is absent.

Conclusion

262. The prosecution has not demonstrated to the requisite standard all the elements to prove manslaughter.

Verdict

263. Not guilty.