[Neutral Citation No. 2005 IEHC 354]

THE HIGH COURT

Record No. 2001 No. 9450P

BETWEEN

DOROTHY CUNNINGHAM

PLAINTIFF

and

THE GOVERNOR AND GUARDIANS OF THE COOMBE LYING-IN HOSPITAL, PAUL BOWMAN, GERARD HURLEY, SIOBHAN Ni SCANNAILL and BERNARD STUART

DEFENDANTS

Judgment delivered by Mrs. Justice Macken on the 5th September 2005

1. The claim in this action by the Plaintiff against the several defendants arises in very sad circumstances in which the Plaintiff's twin boys died in the womb and were delivered stillborn just prior to the date on which they were due to be born in August 1998. The background facts can be summarized fairly briefly.

2. Mrs. Cunningham is a married woman, now in her mid forties. She and her husband already had a child born in 1993. They decided to try for another child. This did not happen initially, but after certain treatment, Mrs. Cunningham again became pregnant in late 1997. She and her husband were naturally delighted. Mrs. Cunningham was referred by the second Defendant Dr. Bowman ("Dr. Bowman"), an obstetrician, to the third Defendant Dr. Hurley ("Dr. Hurley"), a radiologist, for the first scan of the pregnancy. This was taken on 20th January, 1998, at the Charlemont Clinic in Dublin, and was reported on by Dr. Hurley to Dr. Bowman. The first defendant is a long established maternity hospital with a significant reputation in the field of obstetrics. Mrs. Cunningham was registered at the first defendant on 11th February, 1998, under the care of Dr. Bowman. Her babies were due in mid August of that year.

3. As part of the monitoring of her pregnancy, Mrs. Cunningham underwent several further scans, which are of prime relevance in the case. The scans were arranged in the ultrasound unit of the hospital, and were performed either by the fourth defendant ("Ms. Ni Scannaill"), a sonographer employed by the first defendant ("the hospital") who was at the time one of two sonographers in its ultrasound unit taking scans as her everyday occupation and employment, or else by the fifth defendant ("Dr. Stuart"), a consultant obstetrician with a Master's degree in the field of ultrasound, and who, at the time in question, as well as acting as a consultant obstetrician, was also the Director in charge of the ultrasound unit at the hospital, even if not originally employed by the hospital specifically as such.

4. These scans were taken on 18th February 1998, the 6th May 1998, the 10th June 1998 and the 6th/7th July 1998. For completeness sake I refer to two other scans, the first taken early in the month of August 1998 by a Dr. O'Connor, who was looking after Dr. Bowman's patients, including Mrs. Cunningham, , while Dr. Bowman was on holiday, and the second also taken in early August 1998 in the peri natal clinic of the hospital. All the scans, with perhaps the exception of the last, are the subject of considerable and varying disagreement between the parties.

5. Mrs. Cunningham was seen, assessed and monitored by Dr. Bowman at the hospital, more or less every four or five weeks from February, 1998 and then every two weeks from the month of June. She made some additional visits in late July and early August in between the then regular two weekly visits, while Dr. Bowman was on holiday, and she had not been feeling well. She was seen again by Dr. Bowman on the 12th August 1998 when he returned from holiday, at which time Mrs. Cunningham, who was then around 38 weeks pregnant and feeling very uncomfortable, requested that her babies be delivered by caesarean section. Dr. Bowman decided her delivery would be induced on the 20th August if she was not then in labour. On the 17th August, Mrs. Cunningham reported that, having felt strong movement, she now had no feeling of the babies moving at all, and was advised to go to the hospital immediately. She arrived late in the evening when it was confirmed that there was no heartbeat from either baby and that both babies were dead. She was sent home and then returned the following day when the babies were delivered, stillborn.

6. This is a very short outline of the factual background to the claim, up to the delivery of Mrs. Cunningham twins. After the deaths of the twins, Mrs. Cunningham and her husband, who were naturally devastated, had meetings with Dr. Bowman and others in the hospital, and with Dr. Hurley. They made various enquiries with a view to finding out what they could about what might have happened, and over the course of the following months answers were sought from several parties to questions raised in writing by Mrs. Cunningham, many were responded to, and there were meetings with two successive Masters of the hospital.

7. These proceedings were commenced by Plenary Summons on the 18th June 2001, seeking damages for, inter alia, negligence, as well as in respect of mental distress arising out of the death of the unborn twins, and for the treatment of Mrs. Cunningham both during and after the pregnancy.

8. A statement of claim was delivered on behalf of the plaintiff on the 4th April 2002, and in the usual way particulars were raised by some or other of the several defendants. The Plaintiff's statement of claim made various and detailed allegations of negligence against all the defendants. In the course of replies to particulars, some of the acts of negligence were withdrawn as against some or other of the defendants, but I do not think it is useful to repeat all these exchanges.

9. I set out the negligence as finally pleaded against the several defendants, in general categories, and by way of synopsis:

> (a) As against the first, fourth and fifth defendants; failing to diagnose chorionicity antenatally; misdiagnosing it; and diagnosing dichorionicity instead of monochorionicity: failing to read the ultrasound properly or at all; failing to ensure chorionicity was determined properly in the relevant stage in pregnancy.
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> (b) As against the first, fourth and fifth defendants, failing to review ultrasound films properly or at all; failing to ensure that there was in place a proper system for such review: failing to use transvaginal sonography;
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> (c) As against the third defendant, failing to determine or to report on chorionicity in the scan taken by him in January 1998;
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> (d) As against the second defendant, managing the pregnancy as if it the twins were dichorionic rather than monochorionic: failing to manage the twins properly, including arranging for appropriate monitoring: failing to alert the plaintiff to the risks of twin pregnancy or of pre-maturity or of growth retardation or failure, or of the modes of delivery in

the case of such monochorionic twins, or of other peculiarities or risks of such a pregnancy,

(e) As against the first, fourth and fifth defendants, failing to check for or diagnose growth restriction, or discordant growth restriction in or between the twins: failing to check for or diagnose polyhydramnos, failing to quantitate elevation of or to establish amniotic fluid volumes;

(f) As against the first fourth and fifth defendants, failing to check for or diagnose twin to twin transfusion syndrome,

(g) As against the second named defendant, failing to order or carry out sufficient scans or scans sufficiently frequently or properly, in the course of the pregnancy; failing to monitor foetal growth on ultrasound at or after 32 weeks, failing to order or carry out the same properly or at all, or to check that foetal growth was adequate in late pregnancy;

(h) As against the second defendants, failing to give the plaintiff advice and/or counseling, or sufficient counseling in respect of monochorionic twins; failing to care appropriately for the plaintiff and her twins.

10. All the defences delivered denied any breach of duty or any negligence on the part of the respective defendants. The defence of the second and third named defendants pleaded, in addition, that no claim for wrongful death pursuant to the provisions of the Civil Liability Act 1961 as amended lay against them in circumstances where the twins were stillborn, by reason of the provisions of Section 58 of the said Act: that the Plaintiff's claim in respect of alleged mental distress and loss arising from their death did not constitute a claim within the provisions of the Civil Liability Act 1961, as amended: and further that any such claim, if it existed, was time barred by reason of the provisions of the Statute of Limitations 1957, as amended. The defences of the first and fourth defendants, as well as that of the fifth defendant, were subsequently amended to include pleas in the same terms.

11. At the commencement of the hearing in this matter it was agreed by all parties that the issue of liability, solely in respect of the medical aspects of the case, should be dealt with as a preliminary issue. This appeared to me to be both sensible and correct in a complex case such as this, since it would permit the court to determine the liability, if any, of the several defendants, before having to consider any question of damages. This judgment is confined therefore to that sole issue, upon which evidence was tendered, and does not cover the discrete legal defences raised pursuant to the Civil Liability Act 1961 as amended, or those invoking the Statute of Limitations.

12. Finally, in the course of the hearing, after he gave evidence, the plaintiff's claim against Dr. Hurley was struck out on consent, with no further order being sought or made in that regard. So far as he is concerned therefore, only his scan in January 1998, taken on the instructions of Dr. Bowman, and more particularly the true meaning of the report made on that scan to Dr. Bowman, and the scan images retained by him in respect of the same, as well as Dr. Hurley's own evidence on these remain relevant to the issues arising between the other parties.

Monochorionic and Dichorionic Twins

13. Reference will be made in the course of this judgment to monochorionic and dichorionic twins, so I turn now to the issue of chorionicity, the scanning and assessment of which, as well as the significance of the same for the management of Mrs. Cunningham's twins, were disputed between the parties, or some or other of them.

14. The difference between these two types of twins, and confirmation of the same by means of scanning, which, according to the Plaintiff's case, was critical to the manner in which Mrs. Cunningham's pregnancy ought to have been managed and monitored, and her twins delivered, was explained in considerable detail during the course of the hearing. This was very helpful to the Court, for the purposes of understanding the technical details involved, as well as to appreciate the disputes between the parties. While I do not need to go into the same detail, it is necessary to understand something basic about one type of twin and the other, and the scanning of such twins. Not only was there evidence about chorionicity, however, but also about animosity, which is only somewhat related to chorionicity, but which may, indeed usually will, have an impact on the reading or assessment of the chorionicity of twins in the scanning process.

15. As I understood the evidence, from the point of view of scanning, twins present in several possible ways. Firstly they may present in one "sac", or what a layman might call a single overall membrane, inside of which there are two fetuses, but no other apparent membrane, at least not in the very early stages of pregnancy. If the twins are scanned at a very early stage and present within this single membrane, it is nevertheless a chorionic membrane and the twins are properly considered to be monochorionic.

16. At a slightly later stage, but optimally still in the first trimester, there will become more apparent in the course of a scan what is called an amniotic sac inside the above described chorionic membrane. In the case of twins presenting with a single chorionic membrane surrounding both babies, there may in turn be a single undivided amniotic sac carrying both babies, or alternatively, there may be two separate amniotic sacs, each carrying a baby.

17. Twins who have a single chorionic membrane and a single amniotic sac are known as monochorionic monoamniotic twins and are seemingly rare. Twins with a single chorionic membrane and two amniotic sacs inside it, one twin in each, are known as monochorionic diamniotic twins and are more common. Mrs. Cunningham was in fact expecting monochorionic diamniotic twins.

18. On the other hand, at the same very early stage in pregnancy as first mentioned above, twins may also present in two separate sacs or membranes, which may appear simply to be "joined", in layman's terms, back to back, so to speak, or with the separate membranes touching along their length as the twins are scanned. These are neverthereless also chorionic membranes. In the case of such twins with two chorionic membranes, one twin in each, the inside amniotic sacs, when they do become apparent, will obviously also be separated. These are known as dichorionic twins.

Agreed or Undisputed Facts

19. Some facts are agreed, or are clearly not in dispute. It is accepted by all parties that Mrs. Cunningham was expecting monochorionic twin babies. It is also accepted that of the four scans taken in the hospital ultrasound unit, the first and fourth reported to the obstetrician that the pregnancy was of dichorionic twins, the other two containing no express reference to chorionicity. Mrs. Cunningham's hospital chart, in so far as chorionicity was mentioned, recorded her as carrying dichorionic twins. I do not ignore Ms. Ni Scannaill's contention that dichorionicity was not diagnosed by her, but merely suggested, and this will be dealt with in the course of the judgment. Mrs. Cunningham's pregnancy was handled, and she was at all times monitored, on the basis that her twins were dichorionic. In effect, her monochorionic twin pregnancy remained undiagnosed at the hospital until after her twins were delivered stillborn.

20. It is also common case between the parties, or is not disputed, that had Mrs. Cunningham's twins been delivered by caesarean

section or had been otherwise induced, sooner than they were, it is likely, indeed even certain, that both babies would have survived birth and been born alive.

21. It was further agreed or not disputed, that it was possible in 1998, with modern scanning facilities and training, to identify one type of twin from another, although there was a dispute between the parties as to how simple or difficult a task it was to do so, how accurate scanning for chorionicity was, and what the practice was in relation to such scanning in Ireland at the time.

22. All parties also agreed that up to the end of the first trimester of pregnancy, being the optimal time for carrying out a scan for chorionicity, the clearest indicator as to the type of twins involved, that is, whether monochorionic or dichorionic, is the inter twin membrane, an assessment of which in the course of a scan is what forms the basis for any opinion as to chorionicity. The reason for this is that, in essence, if the twins are dichorionic, and after the amniotic sacs develop or become apparent, there are several more layers to the intertwin membrane than in the case of monochorionic diamniotic twins when viewed on a scan. Most witnesses agreed that, in the case of monochorionic twins, the inter twin membrane is "thin and flimsy" whereas in the case of dichorionic twins, the membranes together make for much denser layers between the twins.

23. It was also agreed that while it is possible to distinguish one type of twin from the other in the second trimester of pregnancy, the exercise at that stage is much more difficult, and/or the results are much less reliable, mainly, as I understood the evidence, because the differences between the appearance of the inter twin membranes in the two types of twin lessens or is less readily assessed, as the pregnancy advances.

The Significance of the Difference

24. The significance of the difference between monochorionic and dichorionic twins arises from the fact that there is a greater chance that the blood supply, which is in some way shared between them in the case of the former, may transfuse from one baby to the other, in a condition known as twin to twin transfusion. The risks are higher again in the case of monochorionic monoamniotic twins than in the case of monochorionic diamniotic twins.

25. In effect, the transfusion of the blood from one twin to another may cause the receiving twin to become stressed from the amount of blood received, with an adverse or even fatal consequence, due the heart having to work very much harder. The twin from whom the blood transfuses may in turn suffer from loss of blood, sometimes also fatal. Professor Fisk gave a very clear explanation of how this occurs. The evidence before me, also not contested, established that this syndrome or condition is most likely to occur in the second trimester of the pregnancy, sometimes on a chronic basis, and so, if a mother is known to be carrying twins who are monochorionic twins, they will or may be monitored on a more frequent basis during that period. The evidence also established that while the condition most often occurs in the second trimester, nevertheless an acute transfusion of blood, or twin to twin transfusion causing an acute event, can also occur at a later stage of pregnancy, although more rarely, and much more rarely is it still for it to occur de novo at that late stage. The condition may exist where there is what is called polyhydramnios, which may occur when there is an unduly large presence of amniotic fluid present around one twin, with evidence also of reduced fluid around the other (oligohydramnios).

Scanning Materials before the Court

26. I now say something about scanning. Scans of the type in dispute in this case are taken in what is called "real time", by moving an instrument or probe over the body, and by noting the characteristics of the three dimensional representation of what is being scanned - here the twin embryos of Mrs. Cunningham - on the screen, which is at the same time being assessed by the sonographer or radiologist carrying out the scan. At any particular point during this exercise, the scanning can be stopped, and a "still" or image can be taken of what is then appearing on the screen. According to the evidence, sometimes an image is taken for the parents, who wish to have a record of the pregnancy, and some of the images in court were prepared on this basis. Sometimes the images are taken to record particular features, or to support conclusions or comments in the report prepared on a scan. So far as scans taken at the hospital ultrasound unit are concerned, the images did not fall into this last category. Ms. Ni Scannaill in evidence said that it was not the practice in that unit to take stills or images during the course of the scanning process for the purposes of supporting comments or conclusions found in the ensuing report, while Dr. Hurley gave evidence that in the practice with which he was involved, and where the scan of the 20th January 1998 was carried out, it was the norm to do so. The reports and the stills or images were also made available to the expert witnesses, or most of them, for the purpose of preparing expert reports. However, during the course of the hearing, there were also produced thermal prints taken during the scans themselves, which in turn were also made available to the experts.

27. Once the scan itself is completed, or indeed sometimes as the scan is being taken, a report is compiled, recording indicia found during the course of the scan. These indicia are, at least in the case of the hospital ultrasound unit, recorded on a form which is in a standard format, with provision for the addition of comment peculiar to the individual pregnancy being scanned, or in response to a specific query from the requesting obstetrician. In the case of the scan taken by Dr. Hurley, his report to Dr. Bowman was in the form of a letter.

28. Before the court therefore were firstly, the letter from Dr. Hurley, and the computer generated reports on the various scans taken at the hospital ultrasound unit, secondly, a variety of "stills" or images taken during the course of some or other of these scans, and thirdly the thermal prints referred to above. As to a scan likely to have been taken in the perinatal clinic of the first defendant hospital, in late July/August 1998 there was apparently no written report prepared, but a small number of images taken at the time and given to Mrs. Cunningham were produced in evidence. No report exists either for the scan taken by Dr. O'Connor in his rooms, there being a note inserted into Mrs. Cunningham's hospital chart recording certain results of that scan

29. The evidence also established that, in general, every twin who is scanned will be assessed or monitored for, inter alia, the fundal growth of each twin or crown/rump length, which is the growth between the top of the head and the bottom of the torso, for the presence of the increased amniotic fluids, which might be indicative of abnormalities such as polyhydramnios, as well as for any evidence of discordant growth between one twin and another, independent of the growth, simpliciter, of either twin.

The Applicable Law

30. The Plaintiff, the second, and the fifth defendant, all invoke the case of Dunne v National Maternity Hospital (1989) IR 91, in their respective submissions as setting out the principles to be applied in cases such as this. The first and fourth named defendants do not suggest any different test and I propose to accept the principles set out in that case as appropriate, and in particular the following citation:

> "The true test for establishing negligence in diagnosis or treatment on the part of a medical practitioner is whether he has been proved to be guilty of such failure as no medical practitioner of equal specialist or general status and skill would be guilty of if acting with ordinary care."

31. The Plaintiff's claim on the medical negligence issues, at the opening of the case, and so far as the defendants, save the third defendant, are concerned, can be summarized as follows:

a) As to the fourth and fifth defendants, by reason of the substandard reading and analysis of the scans taken during the pregnancy, the chorionicity of the twins was not determined or was wrongly identified as being dichorionic, despite the fact that in the case of the first scan taken by the fourth defendant it was possible to discern that the twins were monochorionic, and despite the fact that an earlier scan taken by the third defendant clearly established monochorionicity. A further scan taken by the fourth defendant, at a time when the chorionicity of the twins could not be reliably determined, resulted in her repeating the previous made and reporting them as being dichorionic. Further she failed to resolve the conflict existing between her scans and the earlier scan taken.

b) Specifically as against the fifth defendant, Dr. Stuart, as the supervisor of the fourth defendant, he was responsible for her negligent scan: he failed to review her scan which was substandard practice: failed, in the face of two opposite and conflicting chorionicity findings to take the appropriate steps to resolve that conflict: wrongly assessed the twins as dichorionic, and permitted a negligent misdiagnoses of dichorionicity to stand and be reported to the second defendant;

c) As a result of (a) and (b) the twins were incorrectly managed as if the twins were dichorionic;

d) The twins died from twin to twin transfusion according to the pathology reports. There was evidence of polydramnios in the placenta at the 28 week stage of the pregnancy, which was indicative of the onset of twin to twin transfusion syndrome. A scan carried out at the 32 week stage was ambiguous on this. The existence of polyhydramnios was not discovered by either the fourth or fifth defendant and was not reported by either the fourth or fifth defendant to the second defendant.

e) If the death was not caused by Twin to Twin Transfusion Syndrome, then it was caused by foetal growth restriction, or discordant growth as between one twin and the other. Again, this discordant growth was not discerned by either the fourth or fifth defendants and therefore was not reported on to the second defendant.

f) As against the second defendant, the Plaintiff received no counseling concerning the risks of a twin pregnancy and certainly not the intensive counseling she should have received to prepare her for the risks mentioned above. She suffered greater distress therefore when her twins died a few days short of their due date of delivery.

g) Ass against the second defendant, the plaintiff underwent scans, inter alia, at 23, 28 and 32 weeks. However there were no further scans after that date, which was not standard practice, whether or not the pregnancy was dichorionic, as the second defendant had assumed on the information given to him, and certainly not in the case of a monochorionic pregnancy, as was in fact the case.

h) As against the second defendant, the failure to ensure there were adequate foetal growth scans after 32 weeks was substandard practice: had there been such scanning, it is likely that discordant growth between the twins would have been detected. Further, it is likely that in such event, the Plaintiff would have been delivered between 32 weeks and 38 weeks and that the twins would have survived.

The scanning issue

32. Three general issues arose on scanning during the hearing, leaving aside altogether the question of what the actual scan images or the reports in the present case mean or disclose. These are, firstly, the practice in Ireland as to the percentage of babies scanned for chorionicity at the relevant time in 1998, secondly, the accuracy of such scanning for chorionicity, and, finally, the question of how often during the course of a monochorionic twin pregnancy scans should take place and whether that frequency should be the same as or different to the frequency of scans in the case of dichorionic twins.

33. As to the first of these, since the Plaintiff's claim against Dr. Hurley was settled, the particular issue as to whether there was an obligation or a standard practice specifically to scan for or diagnose chorionicity and report on it, in 1998 in Ireland, is no longer relevant. However, as part of the general background, it is as well for me to set out briefly what was said, as it may also influence the way in which the scans were taken and the reporting on them should be assessed. As to the percentage of babies who, according to the practice then existing in 1998 would or should have been scanned so as to establish chorionicity, in accordance with appropriate medical practices in the field of obstetrics, there was disagreement between the witnesses. Professor Fisk gave evidence on this and on several other aspect of the claim, on behalf of the Plaintiff. He is a consultant in Obstetrics and Foetal Medicine with a sub speciality in maternal and foetal medicine and an academic. He has as one of his prime research interests multiple pregnancy, particularly monochorionic twins, and his doctoral thesis was on the disorders of amniotic fluid volume (poly and olohydramnios). He is attached to Queen Charlotte's Hospital and to Imperial College, both in London, and has published widely on multiple pregnancies.

34. His evidence was that scanning to determine chorionicity was common in 1998, was done in every multiple birth at the time, as standard practice in the United Kingdom. He would have expected this practice to be the same in Ireland in a teaching hospital such as the first defendant: he had himself been invited to speak and did speak on the subject in Ireland in 1993, and he had received several referrals from Ireland, including from the hospital.

35. On this issue, it was submitted on behalf of Ms. Ni Scannaill that no independent evidence had been called on behalf of the plaintiff, or the other parties, apart from Ms. Ni Scannaill, relating to sonographer's practices in Ireland, or elsewhere, in 1998 or at any time. Accordingly, it was submitted that that no evidence had been called by the plaintiff or by any co-defendant to challenge the independent evidence offered on her behalf by Ms. Brosnan.

36. Ms. Brosnan is an experienced midwife sonographer practising as such since 1992, and while at present she is Assistant Director of Midwifery in the National Maternity Hospital, she still operates part time as a sonographer. Her evidence was that in National Maternity Hospital in 1998, where she was a sonographer, approximately 50% of all babies were scanned for chorionicity. Dr. McKenna, also called for Ms. Ni Scannaill, has been, on two occasions, Master of The Rotunda Hospital, a long established maternity hospital of considerable repute in Dublin, also with a well developed scanning unit. He is a consultant obstetrician. Essentially he said in evidence that while it would be helpful to have information on chorionicity in 1998, it was not available in all or nearly all cases at his hospital.

37. In her evidence, Ms. Ni Scannaill said it was the practice in the ultrasound unit of the hospital in 1998 to assess for chorionicity in

the first trimester, in all cases. Dr. Stuart's evidence on the practice at the hospital was more detailed. He said that both in 1998, and at present, all scans were done on an "on demand" basis. In 1998 he believed that the ultrasound unit was scanning approximately 10-20% of twin pregnancies in the first trimester, and the remaining 80-90% were scanned later. As to whether all these were scanned for chorionicity, he considered the ultrasound unit was making an effort to do so in all cases actually referred, but, contrary to the evidence of Ms. Ni Scannaill, he considered this was being done in 50-60% of those cases at the time.

38. The Plaintiff submitted that, on the evidence, at least in so far as concerns the prevalence of testing for chorionicity, in 1998, the percentage of twins scanned in general in Ireland, or at the National Maternity Hospital, or in the United Kingdom, in 1998, and the question as to whether the same percentages were, or ought to have been, scanned also in the hospital were not relevant since it was accepted by all parties that Mrs. Cunningham was not only scanned in the hospital, but that Ms. Ni Scannaill actually gave an opinion on the chorionicity of the twins in two reports furnished to Dr. Bowman, in February and July 1998.

39. On this first general issue arising under the scanning heading, I find as follows. If it be relevant, there was certainly, on the evidence, a difference in the rates of scanning of twin babies in general, as well as in the rates of scanning them for chorionicity at the relevant time, both as between hospitals in Ireland, as well as between the position in Ireland, whatever percentage is taken, and that in England. But Mrs. Cunningham was in fact scanned early on in her pregnancy, firstly by Dr. Hurley, and more or less as soon as she was registered, at the hospital's own specialist or dedicated ultrasound unit in February 1998 by Ms. Ni Scannaill. She in turn, and without being requested specifically to do so by Dr. Bowman, scanned the twins for chorionicity and gave her opinion on this. A further scan in July 1998 also taken by her, reported the same results as to chorionicity at that date, and there no debate whatsoever on these two latter facts. Dr. Stuart confirmed in evidence, in that regard, that the ultrasound unit had a protocol in place at that time covering both first and second trimester scanning. He too had scanned the twins for chorionicity in May 1998 but made no express reference to "chorionicity" as such in his reports to Dr. Bowman.

40. In light of the evidence, I find that even if around 50% of all babies at the relevant time were scanned in Ireland at the National Maternity Hospital depending on the skill of the sonographer, as was the evidence of Ms. Brosnan, or scanned for chorionicity, or if that percentage was more or less than the percentage scanned in the hospital, or if these were less or different from the percentages in the United Kingdom, nevertheless having regard to the fact that Mrs. Cunningham's twins were in fact scanned for chorionicity and reported on several times, the difference in percentages or in the practices is of little or no relevance, and in that regard I agree with the Plaintiff's submissions. I do not find any ground for suggesting that the general practice in Ireland, whatever it was, or the absence of a standard practice in hospitals in Ireland similar to that in the United Kingdom, constitutes a material factor in determining the negligence, if any, arising out of the scans which were actually taken, and in respect of which opinions on chorionicity were tendered to Dr. Bowman.

41. As to the measure of accuracy which, in 1998, could have been achieved from the scans, it was claimed on behalf of the Plaintiff that it was possible, during the first trimester of the pregnancy, to assess or determine the chorionicity of twins with a very high degree of accuracy, even 100%, or close to it. Professor Fisk said 100% accuracy could be achieved, that it was straightforward and simple at the first trimester stage. Mr. Penman who gave evidence for Dr. Bowman is, like Professor Fisk, a highly qualified consultant obstetrician and gynaecologist. He is a specialist in foetal medicine at the Medway Hospital in Kent, as well as holding an honourary position at Harris Birthright Foetal Medicine Centre at Kings College Hospital in London. He said scanning for chorionicity was highly accurate, approaching 100%, and straightforward.

42. Ms. Ni Scannaill, when pressed, while disagreeing with a 100% accuracy rate, accepted that, at the relevant time, the accuracy was in the 80 – 90% range. Professor Stuart did not give an opinion on percentage accuracy, saying only that he knew of no medical test which is 100% certain, either in 1998 or at present, and that he did not know of any evidence in the literature to support such a contention. Dr. McKenna, while accepting that he was not an expert in ultrasound, also doubted that any scan could be 100% accurate.

43. It was argued on behalf of Ms. Ni Scannaill that Mr. Penman and Professor Fisk were ascribing their accuracy levels on the basis that the scan is carried out using what is called a Lambda Twin Peak Sign test, which was not in use in Ireland – nor even in widespread use in the United Kingdom at the time – and therefore their evidence could not be taken as accurate so far as Ireland was concerned. It was also submitted on her behalf that Ms. Ni Scannaill had based her determination of chorionicity on membrane thickness, which, it was contended, had been accepted, at least by Mr. Penman, as not being wholly reliable.

44. My findings on this second general aspect of scanning are as follows. While I understand the basis for counsel's contention on behalf of Ms. Ni Scannaill arising from use of the Lambda Twin Peak Sign test, I do not consider this to undermine the evidence actually given, that in the first trimester, the accuracy of scanning, while not as high as that contended for by those using that test in the United Kingdom, was nevertheless at 80 – 90% without the use of that test. Even taking the evidence of Ms. Ni Scannaill that the accuracy was at that level at the time, which evidence was not contested by others, this is a very high percentage degree of accuracy.

45. Such accuracy, even in this lower but still very high percentage context, can be reasonably considered as meaning that the scanning exercise is highly reliable and no witness put its high accuracy rate in issue in any real sense. I am satisfied that the Plaintiff has sufficiently established that the degree of accuracy of scanning for chorionicity at the relevant time was at a very high level.

46. The significance of the accuracy of scanning for chorionicity is not to be gauged solely, however, by reference to the percentage figures themselves, read in isolation. What is important and relevant, is the extent to which a person receiving a report on chorionicity can reasonably and reliably place on the findings emanating from a scan. Given the high degree of accuracy of scanning established on the evidence, as well as the fact that the most frequent scans were carried out in the specialist and well established ultrasound unit at the hospital, I find that persons receiving the scanning reports on those scans were, all other things being equal, reasonably entitled to rely on their contents as having the significant degree of accuracy contended for. This finding is of course without prejudice to the Ms. Ni Scannaill's contention that, in so far as her scans were concerned, she was not furnishing a diagnosis of chorionicity to Dr. Bowman. This will be dealt with later in the judgment.

47. The last of the general scanning issues, namely the appropriate and acceptable frequency of scans, particularly during the course of a monochorionic twin pregnancy, including the acceptable and appropriate frequency of scanning after the 32nd week of pregnancy, is a highly disputed feature of the case. Having regard to the pleadings and the evidence actually given, it seems to me that my findings on this and as to whether this should be the same or different in the case of monochorionic and dichorionic twins, fall logically to be deferred until after the evidence on the scans themselves and their content, are dealt with, which issue concerns both the images taken during the scans as well as the reports prepared on the results of the scans.

The content of the scanning reports and images

48. As to the content of the scanning images and the reports emanating from the hospital, the Plaintiff's case is that both the scans and the conclusions drawn from the scans taken by Ms. Ni Scannaill in February and repeated in July 1998 were wrong, in that not only did she negligently fail to diagnose monochorionicity but she also negligently diagnosed the twins as being dichorionic. Further, the Plaintiff claims in brief, that Dr. Stuart, as the director of the ultrasound unit, and the supervisor of Ms. Ni Scannaill, was negligent in failing to take the appropriate steps to resolve the conflict existing between the findings of Dr. Hurley of monochorionicity and of Ms. Ni Scannaill of dichorionicity but instead had negligently overruled or ignored the correct findings of Dr. Hurley, and adopted or stood over the negligent diagnosis of Ms. Ni Scannaill. Further he was negligent in relying on the erroneous results of a scan taken by him during an acknowledged suboptimal stage of the pregnancy, well into the second trimester of pregnancy and of relying on that erroneous result, without regard to a clear finding of monochorionicity assessed at an optimal period of the pregnancy by Dr. Hurley. Further it is alleged he failed to take the appropriate steps to contact Dr. Hurley to seek clarification of the content of Dr. Hurley's report or to view the images taken by him. It was further submitted that, on the evidence, clarification from Dr. Hurley would have resulted in a clear finding of monochorionicity.

49. It was submitted on behalf of the Plaintiff that Ms. Ni Scannaill, as a qualified and experienced sonographer with approximately ten years experience, who had been given specific training in scanning for chorionicity four years before the events giving rise to these proceedings, if she had been exercising appropriate skill and care, should have determined that the pregnancy was monochorionic, or in the alternative, should not have assessed or reported it as being dichorionic. It was further argued that she ought clearly to have understood Dr. Hurley's report as indicating a monochorionic twin pregnancy and should therefore have appreciated the absolute conflict resulting from her own assessment, and should in consequence have resolved that conflict, if she chose, as she did, to give an opinion on chorionicity. On behalf of Dr. Stuart, it was pleaded and submitted that she should have consulted with him, and thereby given him an opportunity, as her direct supervisor and Director of the ultrasound unit, to consider the conflict and resolve it, but she did not do so.

50. During the course of the evidence it became quite clear that, while all parties agreed that the twins were in fact monochorionic, not all parties were in agreement as to the meaning of Dr. Hurley's report to Dr. Bowman in January 1998 and therefore the significance of his report for the subsequent scans was hotly disputed. I can deal with and dispose of the scan taken by Dr. Hurley fairly briefly. It was the very first scan in the pregnancy, and logically falls to be considered first. His report to Dr. Bowman on the result of his scan in January 1998 in its relevant part, reads as follows:

> "Single gestation sac with twin pregnancy. Foetal heart pulsation identified in both foetuses. C.R.L. indicates a maturity of around seven and a half weeks."

51. Apart from his usual and more extensive practice as a general radiologist, Dr. Hurley had lengthy experience as a radiologist in the obstetrics field. He trained in Glasgow and London. While in Glasgow, he worked at Western Infirmary which he said was almost the birthplace of obstetric ultrasound at that time. He was then appointed to the City Hospital and the Women's Hospital, both in Nottingham. At the latter, part of his job was to carry out an obstetric ultrasound session on a weekly basis. When he returned to Dublin, he continued as a general radiologist, but also carried out two to three obstetric ultrasound sessions of about 40 scans per week at Mount Carmel Hospital over a period of 16 years prior to his recent retirement, including at the relevant time in 1998. He was therefore, in 1998, a well qualified and experienced radiologist, including in obstetric ultrasound scanning procedures.

52. As to what he was looking for on taking the scan, in evidence he said this included foetal heartbeat, confirmation as to the viability of the pregnancy, an assessment of whether the foetus was within the uterus or outside, its measurements, and the likely term of Mrs. Cunningham's pregnancy. He said he had also determined the chorionicity of the twins, and that the first sentence of his letter to Dr. Bowman was clear and specific, with "no ifs or buts". A "single gestation sac" at that stage in the pregnancy can only refer to the chorionic cavity. According to him, there was no other interpretation open to the finding of "a single gestation sac".

53. Dr. Hurley said that he could not give any more information because the amniotic sacs are, at the 7.5 week stage of pregnancy, closely applied to the foetus, and it is only later that they expand so as to be closer to the chorion and therefore discernible by scanning. He explained that it would not be possible to determine at that stage of gestation whether the twins were monoamniotic or diamniotic, and so it was preferable to report simply on the existence of a single gestational sac, although he accepted that he could also have reported "monochorionic, amniocity not determined", instead of what he actually wrote. In support of his use the phrase, both at the relevant date, and since, he relied on several guidelines and international papers and references, with appropriate publication dates, which were produced in court.

54. Although his reference to "a single gestation sac" had been criticized by Professor Fisk date when used in a report to an obstetrician, which is no longer an issue between the parties, Dr. Hurley, while acknowledging the expertise of Professor Fisk, said he believed that the latter could only himself have determined the chorionicity of the twins, as he had done, by himself referring to the same criterion in reading the images, namely a single gestation sac.

55. Mr. Penman on behalf of Dr. Bowman, was unequivocal in his view that, to an expert in ultrasound, the description "a single gestation sac" is a perfect description of a monochorionic twin pregnancy. A single gestation sac and a single chorion are synonymous terms. There would have been no doubt whatsoever in his mind on that, if he had received Dr. Hurley's report. He explained, in somewhat the same way as Dr. Hurley and Professor Fisk, that in the very early stages of pregnancy, it is not always possible to discern the amniotic membranes as they may not have moved out towards the chorion (Dr. Fisk), or may be still closely applied to the fetuses (Mr. Penman) and they may therefore not be reported on.

56. Ms. Brosnan agreed that, to her, the phrase would very likely indicate a monochorionic pregnancy. Asked if there were any doubt about this, she responded that she would like to review the images, to be sure, but on being pressed by counsel on behalf of Dr. Bowman, agreed that "a single gestation sac" could not have been indicative of a dichorioinic twin pregnancy.

57. Ms. Ni Scannaill, on being cross examined also on behalf of Dr. Bowman, initially said in evidence that while she knew of Dr. Hurley's report when she carried out her first scan and had read it before she did so, she did not consider the report to indicate, diagnose or even suggest to her, by the use of the phrase "single gestation sac" that he had found the twins to be monochorionic. Given the twins were in one sac, monoamniotic was the interpretation that she was reading from the description given by him. On being pressed however, in the course of a separate cross examination, she accepted that the phrase used could only be indicative of a monochorionic pregnancy. She also accepted that that monochorionic pregnancy could be either monoamniotic or diamniotic, and that the various diagrams of the different types of twins were correctly represented in Callan on Ultrasonoghraphy, [3rd Edn]. 1994.

58. Dr. Stuart, in his evidence, criticized the report of Dr. Hurley, on the basis that it was merely escriptive. He said that while the phrase used implied monochorionicity to him, the letter did not inform the obstetrician that the twins were monochorionic. On the other hand, he said, had Dr. Hurley written the word "monochorionic", that assessment would have stood for the remainder of the

pregnancy; he, Dr. Stuart, would have accepted that the twins were monochorionic; and it would have been reported to Dr.Bowman as such, even if diagnosed otherwise by Ms. Ni Scannaill. He volunteered in evidence that had Dr. Hurley used the word "monochorionic" in his report "we wouldn't be here".

59. He also said that when he had seen Ms. Ni Scannaill's scan, and had read Dr. Hurley's letter, in May or June 1998 – it was not clear precisely when he read the letter - and having already carried out his own scan, he assumed, or took the view, that Dr. Hurley had perhaps not fully understood the concept of chorionicity, or through error had failed to note the inter twin membrane, because, he said, "at that stage you may not see the inter twin membrane."

60. Turning to the images taken by Dr. Hurley, upon which he based his report, which were put in evidence, Professor Fisk said it was clear from them that the twins could readily have been identified as monochorionic, which he had said in evidence is as different from dichorionic twins as "chalk and cheese". Mr. Penman agreed. He said in evidence that he had considered five images. He said that the chorionicity was obvious in the images – that it was a monochorionic twin pregnancy. He was able to determine this simply by holding up the images to the light, and with no difficulty whatsoever. Both he and Professor Fisk said, however, that what could not be seen was an amniotic membrane, for the reasons already explained.

61. Ms. Brosnan also agreed it was possible to glean from the images that the twins were monochorionic. Ms. Ni Scannaill, although reluctant to comment on the work of another person carrying out a scan, finally agreed that Dr. Hurley's images did in fact disclose monochorionic twins. Dr. Stuart, although he viewed the images taken by Dr. Hurley, was not prepared to make any comment on or come to any conclusion as to chorionicity based on them, because he said, the plane and the direction of the film containing the images were unknown or were not clear to him from the images produced.

62. On the questions which arise on Dr. Hurley's scans, which may affect also the manner in which the later scans taken at the hospital are to be assessed, as well as the legal consequences flowing from the same, the following are my findings. Firstly, I accept the evidence of Dr. Hurley, supported by Professor Fisk and Mr. Penman in particular, that at the very early stages in a pregnancy, in this case in or around 7.5 weeks, it may not be possible to discern an amniotic membrane because of where this (or these) may lie, as explained in their evidence. Dr. Hurley's evidence on this quite simple and straightforward explanation for his choice of phrase was not challenged on any scientific or medical ground by any witness. Indeed, the evidence of Professor Fisk, Mr. Penman and even of Dr. Stuart supports what Dr. Hurley said and the literature presented in court on the scanning of twins also did so.

63. It is worth noting that Dr. Penman stated that in ultrasound terminology, and to an ultrasound expert, a "single gestation sac" is "a single chorion", the terms being synonymous. This statement too was not challenged in any way. When Dr. Stuart in evidence stated that he though Dr. Hurley might not have found the inter twin membrane, because "this is not always visible at the very early stage in pregnancy", that statement, when considered in the context of the evidence of other experts, including Dr. Hurley, most likely refers to an inter twin amniotic membrane, and certainly does in the case of a monochorionic diamniotic pregnancy. The statement could not be understood as applying exclusively or solely to a dichorionic inter twin membrane. The preponderance of the evidence made it clear that a "single gestation sac" could only apply to a monochorionic pregnancy.

64. Secondly, the images produced in the course of the ultrasound scan taken by Dr. Hurley, also on the preponderance of the above evidence, and despite Dr. Stuart's reluctance to take any view on these, clearly and readily permitted a diagnosis of monochorionicity to be made. No witness suggested that the images more clearly or in any way established or suggested a dichorionic pregnancy, or that the pregnancy was doubtful as to chorionicity.

65. Thirdly, Dr. Hurley's explanation that he could not determine whether the twins were monochorionic monoamniotic or monochorionic diamniotic for the unchallenged reasons given, and therefore his report to Dr. Bowman did not include more, must also be read in context. He was a general radiologist, although having some very considerable experience in obstetric scanning. He was asked to carry out a scan for the viability of the pregnancy, at a very early stage, when even the existence of twins was unknown, and to confirm the position back to Dr. Bowman. He did so, reporting on all the usual indicia one would expect, as well as including the above phrase and, according to the evidence, in the knowledge that Dr. Bowman had available to him a specialized ultrasound unit in the hospital for future scans.

66. My findings on the significance of Dr. Hurley's scan, both as to the report and as to the images, are as follows. As to what his report should have meant firstly, to other radiology or ultrasound experts, such as Ms. Ni Scannaill and Dr. Stuart, I find it established on the evidence that the phrase "single gestation sac" was, or ought to have been understood by such readers of his letter, as a clear and unequivocal indication of monochorionicity. Indeed two things are striking from the evidence. One is that Ms. Ni Scannaill, when pressed, agreed that the phrase could not be understood as being anything other than an indication of monochorionic twins, although she first, and notwithstanding her long years of experience as a sonographer, appeared confused in cross examination, as between a chorionic membrane and an amniotic membrane, attaching the phrase used by Dr. Hurley to the latter. The other is that Dr. Stuart, although critical of the use of the phrase, because it would not indicate monochorionicity to an obstetrician, did accept that it implied monochorionicity to him. When he himself carried out the scan of Mrs. Cunningham, in his report back to Dr. Bowman on the 6th May in respect, inter alia, of chorionicity, and which will be considered subsequently in this judgment, he too used merely descriptive terms. He did not in his own report, actually mention the word chorionicity.

67. It does not follow, therefore, that, as between experts, use of the descriptive phrase "a single gestation sac" should be dismissed as not being a sufficiently clear indication of such a finding because it did not actually use the word monochorionicity. Having regard to the evidence, inter alia, of Professor Fisk and Dr. Penman on the meaning of the phrase as between experts, to the evidence of Ms. Ni Scannaill and Ms. Brosnan that the phrase could only mean monochorionicity and could not mean dichorionicity, and to that of Dr. Stuart that the it implied monochorionicity to him, as well as to his evidence that if the word itself had been used, the report would have been taken by him as being the definitive diagnosis as to chorionicity of the twins standing for the entire duration of the pregnancy, I adjudge that when the Dr. Hurley's letter made its way to the hospital charts of Mrs. Cunningham, and when it became available both to Ms. Ni Scannaill and to Dr. Stuart, as it clearly did, both of them should have understood and should have accepted, as persons skilled in ultrasound, that the twins had been assessed or diagnosed by Dr. Hurley as being monochorionic, that this assessment was unequivocal, and was taken at an optimal time in the pregnancy, but that there was no further or more detailed diagnosis as to whether the twins were monoamniotic or diamniotic.

68. Secondly, however, that is not to say that an obstetrician, not skilled in ultrasound, ought to have understood the use of the same phrase as a clear indication of chorionicity. I have already given the context in which the ultrasound scan was carried out. It is clear from the evidence that Dr. Bowman, although challenged in that regard on behalf of the Plaintiff and Ms. Ni Scannaill, did not himself understand the phrase used by Dr. Hurley as a notification to him that the twins were monochorionic. It is also clear from his evidence that he used the specialist ultrasound unit at the hospital as part of his regular practice with pregnant women registered at the hospital, for the reasons which he gave, and that he knew he would receive a definitive indication of chorionicity from the hospital

ultrasound unit.

69. While I do not have to make any formal finding on this issue, given the case against him at the opening, so far as concerns Dr. Bowman I am satisfied that there can be no criticism of him for failing to appreciate that Dr. Hurley's report to him diagnosed a monochorionic twin pregnancy.

70. On the contrary, however, having regard to the evidence, I find that both the fourth and the fifth Defendants failed correctly to interpret, understand or accept the clear assessment and notification of chorionicity set out in Dr. Hurley's letter to Dr. Bowman. As to whether this was negligent or contributed to any negligence on their part, before coming to a view on this, it is first necessary to consider the scans taken at the hospital ultrasound unit, and the evidence relating to these, and the content of the reports to Dr. Bowman.

71. As to the scans taken at the hospital, I deal with those consecutively, both as to the reports and such images or thermal prints as are available.

The Scan of the 18th February 1998
72. In her report of the 18th February 1998 Ms. Ni Scannaill stated as follows:

> "Twins lying one over the other. CRL's 60 to 64 mm = dates. One large placental bed. The membrane appears thick in places suggesting dichorionic twins here."

73. According to the Plaintiff, Ms. Ni Scannaill's evidence was conflicting on whether she had a recollection of doing this scan or was merely relying on her notes written at the time. She said in evidence that reading from her report gave her an indication of what she had seen, although she also said she had recalled that this first scan, which she knew to be of twins, was a difficult one to carry out. I conclude from her evidence that while she recalled it to have been difficult, her recollection of the details of her scan findings came from reading the report actually made by her at the time.

74. As to the phrase a "membrane thick in places", Professor Fisk regarded this expression as biologically implausible, and as a description that he had never encountered, and Mr. Penman said that such terminology was never used, was meaningless and unreliable, and was not a known criterion used in scanning for chorionicity.

75. Dr. Penman gave a very clear and complete explanation of the difficulty attaching to the use of the phrase, which he said must be contrasted with a finding of a "thick" membrane. He said that the use of the phrase must carry with it the implication that the membrane is also "thin in places", and that it can only be "thick in places" as a result of an artefact of scanning. Ms. Brosnan said the expression was a poor one but she believed she understood what Ms. Ni Scannaill meant. She thought that she was saying, not so much that the membrane was thick in places, but rather that where the membrane could be seen, it was thick.

76. Neither Ms. Ni Scannaill nor Dr. Stuart relied on or invoked the explanation given by Ms. Brosnan as being the reason for the choice of the phrase "thick in places". As to Ms. Ni Scannaill, she said in evidence said that her choice of the phrase "thick in places" was to record what she had seen during the ten to fifteen minutes which had spent on the real time scan, examining the membrane from where it leaves the placenta right down between the twins, and that this was the phrase she ordinarily or frequently used, but gave no other explanation for its use.

77. Dr. Stuart said he understood and approved the terminology used. According to him in the case of dichorionic twins, there will be evidence of the membrane being thick in places. He explained that in scanning there will always be a view where the material is thick in places, but that something which is not thick cannot be made thick, although he did not give an explanation as to what the phrase was actually meant to indicate or represent, other than what it actually says.

78. As to the actual images, it must be understood that these were taken by Ms. Ni Scannaill to give to Mr. and Mrs. Cunningham, not to support anything appearing in Ms. Ni Scannaill's report, as she had already confirmed to the court that it was not the practice of the ultrasound unit in the hospital to record or maintain images in support of conclusions or comment in the scanning reports.

79. Professor Fisk said he could see no evidence of any thick membrane or of dichorionicity on the images actually presented, and he believed it was possible even to say that they were monochorionic from the thermal prints presented shortly before the hearing. Mr. Penman did not wish to comment on them. Ms. Brosnan thought that it looked like a monochorionic pregnancy in one of the two images but in the other there was what appeared to be a thick membrane. Dr. Stuart was not prepared to give any opinion on chorionicity from the images, saying they had not been taken for that purpose.

80. On behalf of Ms. Ni Scannaill it was submitted that her decision was based on membrane thickness. Counsel on her behalf argued that Mr. Penman, while discounting the phrase "thick in places" nevertheless accepted that measurement or observation of the membrane is not a very accurate method for determining chorionicity, in particular in the absence of the use of the Lambda Twin Peak Sign test. Both Dr. Stuart and Ms. Ni Scannaill used the phrase "thick in places" regularly, and therefore this was appropriate use when the membrane appeared to be thick in place during the course of the real time scan.

81. Professor Fisk said in evidence, however, that at the early stages of pregnancy, in the first trimester, it is the thickness of the chorion which is the simplest and most reliable test applicable.

82. It was submitted on behalf of Ms. Ni Scannaill, further, that the reliability or accuracy of the test at twenty three weeks was agreed to be suspect, because the determination made at that time is solely by reference to the measurement of the membrane and its thickness. Therefore, it was argued that since the thickness of the membrane was also the criterion used at twelve weeks in this case, there was an equal chance of determining chorionicity at twelve weeks as at twenty three weeks. I understood to mean that the determination of chorionicity was also suspect at that twelve week stage, if based merely, as here, on the thickness of the chorion.

83. As to the report of Ms. Ni Scannaill on this scan, my findings are as follows. I am satisfied from the evidence adduced, that the phrase "thick in places" as a not clear description of the appearance of the inter twin membrane in the course of a scan, and that while it might be a phrase used by Ms. Ni Scannaill and accepted by Dr. Stuart, it was not, on the evidence, either an appropriator indicator or criterion, nor a correct or accurate description of the true position. The fact that it is not found in any literature was not challenged by either Ms. Ni Scannaill nor by Dr. Stuart. I also accept that on the evidence, it could be descriptive of an appearance arising from an artefact of scanning, as mentioned Professor Fisk, by Mr. Penman and also by Dr. Stuart. I am also satisfied, and I find as a matter of fact, that the inter twin membrane in this case was not "thick" in the sense in which this is understood in the field of

scanning, despite the contention of Dr. Stuart to the contrary.

84. The position on the issue of "thick in places", on the clearest evidence, which was that of Mr. Penman, is relatively straightforward, although it was agreed by all parties, and I also accept, that the scanning process itself may be quite difficult.

85. The expert evidence, especially when read in conjuction with the publications produced in court, was clear. A dichorionic twin pregnancy presents in the manner I have already mentioned above. This means necessarily that the intertwin membrane will be made up of the layers of chorionic membrane, together with layers of the amniotic membranes, that is to say four layers, at the time the latter membranes become discernible. Since it is equally established from the evidence that amniotic membranes are very flimsy, the combined membranes in a dichorionic pregnancy will be thicker or denser, if not significantly thicker or denser, at least relatively speaking, than in the case of twins which are monochorionic diamniotic, again at the appropriate time in the pregnancy.

86. Further, it is clear from the evidence that the layered inter twin membrane in a dichorionic twin must be "thick" in the sense called for in ultrasound, which as I understood from the expert evidence, means through the moving length of the twin sacs as these are being viewed, so that at any imagined cross section along the length of the inter twin membrane, the membrane will be "thick", as the probe moves diagonally along the probe line, and it is this "thickness" which allows for a diagnosis or assessment of dichorionicity. On the other hand the inter twin membrane in monochorionic diamniotic twins, being thin and flimsy accordance to the preponderance of the evidence, will also remain so also along the inter twin membrane as this is being viewed along the probe line.

87. Dr. Stuart in his evidence as well as Professor Fisk and Mr. Penman agreed that an artefact in scanning can give the impression that something may appear thick, and the explanation for this, while technical, was nevertheless clear. However, it must be this very possibility which requires the sonographer or radiologist to be especially alert to its existence and therefore not to diagnose on the basis of something being "thick in places" rather than a membrane which is in fact "thick" or "thin" as the case may be along the length of the inter twin membrane.

88. I am satisfied that an appearance of a membrane in the course of scanning as being "thick in places" while a possiblility, due to an artifact of scanning, cannot be read in isolation. Where the real disagreement exists between the experts is with the finding "suggesting dichorionic twins" consequential upon a finding of a membrane "thick in places". The evidence established that a membrane cannot be "thick in places" in the sense that this would result, as an inevitable or even likely consequence, in a dichorionic twin pregnancy. Mr. Penman's evidence that the notation "thick in places" necessarily implies that it will also be "thin in places" was not challenged. The latter would be indicative, on the evidence, of a monochorionic diamniotic pregnancy, as was in fact the case, while allowing for the possibility, through an artifact of scanning, of the appearance of something "thick in places".

89. In the foregoing circumstances, either Ms. Ni Scannaill did not carry out the scan correctly, or she did not read the real time scan correctly, at a time when all the expert evidence, including her own, accepted that it was possible to do this with very high degree of accuracy. I find that, at the very least, the phrase "thick in places" could not reasonably, and without negligence, have excluded a monochorionic pregnancy, and therefore could not form a proper or valid basis for the conclusion actually reported, namely "suggesting dichorionic twins". Having regard to the foregoing, and given the high degree of accuracy possible at the relevant time, as well as the fact that Ms. Ni Scannaill was a skilled and experienced sonographer, I find that her reading of the scan, as well her conclusions, were negligent. So also was her subsequent reporting to Dr. Bowman that the twins were in fact dichorionic.

90. Notwithstanding this finding, Ms.Ni Scannaill argues that her report should not in any event have been relied upon by Dr. Bowman as being anything other than a suggestion of the chorionicity of the twins and that is how she actually described it, and was not a diagnosis of chorionicity such that it should be definitive of the manner in which the pregnancy should be handled by an obstetrician. In evidence she said that she was always instructed that her report was not a diagnosis, but merely part of an overall picture within the pregnancy, and that the obstetrician could accept or reject the suggestion tendered.

91. As to that defence, the evidence of Dr. Bowman was to the following effect. He said he was not aware of the significance of the phrase used by Dr. Hurley in his report, and that in any event he had sent Mrs. Cunningham to Dr. Hurley merely to confirm the pregnancy and its viability. He preferred to have his detailed scans done at the hospital, not only because it would be pointless having a patient attending for antenatal treatment at the hospital, and then sending her elsewhere for scans, but also because he considered the ultrasound unit in the hospital to be very good. He knew that there was a great deal of published research which had emanated from scanning which took place there, and that it had been given a prestigious award by the Royal College of Obstetricians and Gynaecologists in London in the past.

92. He said that not having understood the meaning of the phrase used by Dr. Hurley he wanted to have information regarding the type of twin pregnancy in question, and therefore sent Mrs. Cunningham for a further scan as soon as she was registered at the hospital. He relied entirely on the report from the ultrasound unit in regard to the chorionicity of the twins. When he had received the report, he was happy it confirmed the normal development of the twins, and that they were considered to be dichorionic. As to why, he said such twins were less risky than monochorionic twins, and explained that the latter require greater watching or monitoring than dichorionic twins.

93. Mr. Penman in evidence said that if an obstetrician sends a woman, known to be expecting twins, to an ultrasound unit for scanning, he can expect a report on which he will plan his further management in the pregnancy. If Ms. Ni Scannaill's report were furnished to him as a person not trained in scanning, he would rely on it as saying the pregnancy was dichorionic, and would manage it accordingly.

94. It was accepted by Ms. Brosnan, with some initial reluctance, that the sonographer is best placed to give an opinion on chorionicity to assist the consultant to manage the mother, and that it was reasonable for an obstetrician to rely on the content of the report. In particular in the present case, Dr. Bowman would be entitled to rely on the report, considering the experience of the sonographer in question.

95. On this point I find as follows. Ms. Ni Scannaill's report is, in essence, unequivocal in its findings. It is true that she used the words "suggesting dichorionic twins" in the report, and it is true that she did not accept that her report should be considered as a diagnosis or finding, such that the second named defendant would rely on it to the exclusion of other indicia in relation to the management of the pregnancy.

96. However, it was the preponderance of the evidence, save for Dr. Stuart, who while approving of the phrase, expressed no opinion on the extent to which an obstetrician should rely on it, that the words used are not intended to limit the assessment or determination or diagnosis or opinion, whatever word is employed by the taker of the scan; that such wording "suggesting dichorionic twins" was at the relevant time and still is in regular use; that it is intended to be understood by everyone to whom the report may

be addressed or by whom it might be used, as indicating that the pregnancy is, in this case, one involving dichorionic twins; and that it is not, as contended for on behalf of Ms. Ni Scannaill, intended to be merely suggestive of a possibility of chorionicity, nor as an expression of any doubt about the findings on the part of the scanner.

97. It was said in evidence by Mr. Penman - and it would be difficult to find otherwise, save perhaps where the obstetrician in question is also a radiologist or has an expertise in ultrasound - that the report from a scanner will in most cases be the only document available to the obstetrician which will give an indication as to chorionicity.

98. Having regard to the foregoing, I find that Dr. Bowman was entitled to rely on the report of the scanner in this case, Ms. Ni Scannaill, as a clear indication or assessment that the twins Mrs. Cunningham was carrying were dichorionic. Before I decide the consequences of this finding, it is also important to have regard to the additional information on the file, namely the report from Dr. Hurley, a highly important piece of information. I have already found that his letter would and should have been understood by any experienced ultrasound sonographer, such as Ms. Ni Scannaill, as evidence of a finding that the twins were monochorionic. Indeed it was strong evidence.

99. It was the preponderance of the evidence, and I find as a fact, that Dr. Hurley's report could not have been read, on any basis, as being indicative of dichorionic twins. Had Ms. Ni Scannaill properly taken into account the content of this letter, it would have indicated, at the very least, a clear contradiction between her results and those in a report resulting from a radiologist's earlier scan. She took no steps to resolve that contradiction, but instead ignored the findings contained in it. She wrongly interpreted its content, having initially said in cross examination that the considered the phrase as being indicative, not of chorionicity, but of amniocity. On her own evidence she ought to have had a doubt, and a serious doubt, about her diagnosis, if she had competently and without negligence interpreted Dr. Hurley's report, and correctly applied her subsequently admitted knowledge of the meaning of the phrase "a single gestation sac" as being consistent only with a monochorionic pregnancy.

100. In light of the foregoing, and the evidence, as well as my findings on the defence raised by her, and my conclusions on her own scan, I find that Ms. Ni Scannaill negligently failed to diagnose the twins as being monochorionic, negligently misdiagnosed the pregnancy of Mrs. Cunningham as being of dichorionic twins, and negligently reported the same to Dr. Bowman.

101. Further, the evidence of Mr. Penman and of Professor Fisk was to the effect that Ms. Ni Scannaill, if she was contradicting another, earlier report, in this case one from a radiologist, it was appropriate to have called for a second opinion, such as that of Dr. Stuart. This was also the evidence of Ms. Brosnan, and of Dr. Hurley, and was invoked by Dr. Stuart as part of his claim against Ms. Ni Scannaill. He said that it was standard practice, and a regular occurrence for Ms. Ni Scannaill, in the case of any doubt, to contact him directly, if he was in the hospital, or to arrange another scan in a short period if he was not immediately available. It was said in evidence that the ordinary and acceptable standard of care would dictate that she should have contacted Dr. Hurley and secured the images available from him. As to what the outcome would have been, Mr. Penman said that the outcome would have been obvious, that one was dealing with a monochorionic pregnancy. As to Ms. Brosnan, in answer to counsel for Dr. Stuart, she agreed that Ms. Ni Scannaill could have said nothing at all about chorionicty, could have expressed a doubt about the chorionicity or could have consulted her supervisor, Dr. Stuart. Ms. Ni Scannaill however said in evidence it would not have been her decision or, as I understood her, her competence, to contact Dr. Hurley, and that Dr. Stuart was the only person who would decide whether to do so or not. She did not, on the evidence, however, refer the matter to Dr. Stuart so as to afford him any opportunity to do so.

102. The preponderance of the evidence in that regard was that proper practice dictated that she should either have checked with the author of the report or she should have referred the matter to her supervisor. Further, given that her supervisor, Dr. Stuart in evidence volunteered that had Dr. Hurley used the word "monochorionic" instead of "a single gestation sac" this would have been sufficient for him to have accepted that the twins were monochorionic, clarification of Dr. Hurley's report would have, in fact, resolved definitively and for the entire of the pregnancy, the question of the chorionicity of Mrs. Cunningham's twins. I have already found that the phrase actually used was sufficient to indicate, clearly, to experts in ultrasound, a monochorionic pregnancy.

103. In the circumstances, I find that Ms. Ni Scannaill was also negligent in failing to consult with her supervisor or to ensure that the author of the report, which disclosed a diametrically different view as to chorionicity to that which she discerned and reported to Dr. Bowman, was contacted with a view to resolving the serious conflict between her assessment and that of Dr. Hurley.

The scans of the 6th May and the 10th June 1998

104. The next scanning issue concerns the scans taken by Dr. Stuart on the 6th May 1998 and the 10th June 1998. From the point of view of ultrasound management, there is little between these two, save that in the case of the second, an issue arises as to whether there was evidence of the existence of polyhydramnios, which I propose to deal with separately, and also a question as to what might have been discussed with Mr. and Ms. Cunningham about identical twins, which I will also deal with separately.

105. It is common case that the first of these scans was done at a period well after 20 weeks of pregnancy, and that Dr. Stuart did not refer expressly to the word "chorionicity" in his report. It is, however, accepted by him that in fact he checked for chorionicity at this stage. Indeed, the separate comment which appears in his report of the 6th May can only have referred to chorionicity.

106. The issues which arise for consideration in relation to Dr. Stuart's scan, both of May and of June 1998, and the claim made against him, were, inter alia, whether or not he should have remained silent on the question of chorionicity, having checked for this, and having on file two reports, which were diametrically opposed in terms of diagnosis or assessment, whether he should have contacted Dr. Hurley and clarified the position on the earlier scan, and whether he should be responsible for the results of the scans taken by Ms. Ni Scannaill, and the reporting of dichorionicity to Dr Bowman, having himself also assessed the twins as being dichorionic.

107. As to his own scans, the first one was taken at a time when it is accepted by all parties that the assessment is much more difficult and less reliable than in the first trimester. His report of the 6th May 1998 stated as follows, apart from the details concerning amniotic fluids, size, crown rump measurements, etc:

> "Similar gender twins.
>
> Single posterior placental mass.
>
> Intertwin membrane 2mms."

108. Dr. Stuart's evidence was somewhat conflicting as to when he knew or read Dr. Hurley's report. In one answer he said he had not read Dr. Hurley's report until the scan in the month of June. In another he indicated he had read it at the date of his first scan in

May 1998. In either event, he said nevertheless he had significant faith in the competence and experience of Ms. Ni Scannaill and that her assessment coincided with his own, which he had carried out independently. Therefore, he contended that he was entitled to consider that his assessment and that of Ms. Ni Scannaill, were the correct ones.

109. It was put to Dr. Stuart that in the case of any doubt, he could and should have checked with Dr. Hurley, but Dr. Stuart stated he did not have any doubt, either in relation to his own scan of the 10th May or that of Ms. Ni Scanaill. It was also put to Dr. Stuart that he should, in fact, have had a doubt, in light of his own evidence that Dr. Hurley's report had implied monochorionic twins to him. He indicated that he was usually correct in his assessment of chorionicity, that he did not know of the expertise or experience of Dr. Hurley, and in fact thought he had erred in his reading of the scan.

110. On this point, I have already set out the evidence of the witnesses as to what someone expert in ultrasound, including Dr. Stuart, would or should have understood from Dr. Hurley's report. I have to say I was slightly taken aback by the evidence of Dr. Stuart on Dr. Hurley's report, which I found at times also to be contradictory. Although accepting that Dr. Hurley's report implied monochorionicity, he appeared extremely reluctant to accept that it clearly indicated this. He also said in evidence that had Dr. Hurley used the word "monochorionic", even if Ms. Ni Scannaill had later reported the twins as being dichorioinic, he would have accepted Dr. Hurley's diagnosis of the twins as "monochorionic" for the entire of the pregnancy. While he complained that Dr. Hurley ought to have used the word in reporting to Dr. Bowman, the question for consideration here is not what an obstetrician would understand from the use of the phrase, but rather what an expert in ultrasound, and Dr. Stuart is certainly that, would or should understand from it. In a short series of extremely clear questions by counsel, in the course of the cross examination of Ms. Ni Scannaill, and of Ms. Brosnan it became clear that to an expert in ultrasound Dr. Hurley's report could not have meant anything other than monochorionicity, and certainly could not have been indicative of a dichorionic pregnancy. There was, at the end of that series of questions, no doubt about this. I am satisfied that Dr. Stuart knew, or ought to have known, and clearly, that Dr. Hurley's report was unequivocal in its assessment. It follows, therefore, that Dr. Stuart had on Mrs. Cunningham's file, at the time he carried out his first scan in May 1998, reports of two scans, each with a seriously different and opposing diagnosis as to chorionicity.

111. He was therefore faced with deciding whether one or other was correct. His own notation "single gender twins" could have applied to either type of twins. In evidence, he clarified to the court, that "a single placental mass" was also not determinative of chorionicity. That being so, he explained he then considered the thickness of the chorion, which he found to be 2 mm. Again, as a point of clarification, he explained that while a chorionic membrane is typically in a range between 1.4mm and 2.25mm in thickness, the cut off point between monochorionic and dichorionic twins is usually taken as being 2 mm.

112. Mr. Penman, in relation to the information contained in the scan report of Dr. Stuart said that the first two indicators given above both pointed towards monochorionic twins, or were not clearly indicative of dichorionic twins, and therefore the only indicator which Dr. Stuart had was a 2mm membrane.

113. The preponderance of the evidence of the experts, and Dr. Stuart confirmed this as being his own practice, was that in the event there is any doubt about a chorionicity finding, the practice is that the twin pregnancy will be treated as being monochorionic, and not dichorionic. He explained to the court that this because of the higher risks involved in the case of monochorionic twins, so as to ensure that the treatment or monitoring of the twins is established to meet that highest possible risk.

114. At the time of his scanning assessment in May 1998, he had therefore, a clear indication of a diagnosis of monochorionicity from Dr. Hurley, his own assessment, which put the thickness of the inter twin membrane at the very border or safe cut off point between monochorionic and dichorionic twins, and Ms. Ni Scannaill's assessment of the membrane being thick in places and therefore suggesting dichorionic twins.

115. On the evidence, I find that in these circumstances, that he could not and ought not, without more, have dismissed outright or ignored the report of Dr. Hurley, or took the view, as he said, that Dr. Hurley had not seen an inter twin membrane, or perhaps did not appreciate the concept of chorionicity. He accepted he did not know of Dr. Hurley's expertise or his experience. He did not know, therefore whether Dr. Hurley's report should have carried a little or a lot of weight. It appeared from his evidence that he may not have known of Dr. Hurley, but he would have known from his report that he was a radiologist. He would also have known that when Dr. Hurley took the scan, it was during the optimal period for the assessment of chorionicity, even if not for amniocity, and that his own scan, as he admitted, was taken at a suboptimal time, much later in the pregnancy, and well into the second trimester.

116. He could of course have checked with Dr. Bowman as to Dr. Hurley's known expertise or experience. He could quite clearly have contacted Dr. Hurley, to determine whether his or Ms. Ni Scannaill's findings should stand, in the face of the earlier report. Dr. Hurley in evidence indicated that he was surprised not to have been contacted. He explained that the reason why his practice retains the images which support comments or conclusions in reports or letters is so as to ensure that they are available to other experts in case it may be necessary or appropriate to review them.

117. No witness suggested that it was normal or standard practice not to consult with a radiologist who had carried out an earlier scan, in the circumstances described above, nor that the appropriate or standard course of action was to ignore the conflict between one existing scan and another. Nor did any expert witness suggest that it was appropriate or standard practice, given the importance of the time periods involved in such scanning, merely to carry out a further scan, including one for chorionicity, at a recognized suboptimal time in the pregnancy.

118. Taking into account all of the foregoing, I find that although Dr. Stuart indicated that he had no doubt, he ought to have had a doubt, and therefore he could not legitimately and ought not to have ignored or set aside the diagnosis of Dr. Hurley, and especially ought not to done so on the basis that he did not know of Dr. Hurley's expertise or understanding of chorionicity, or on the assumption that he, Dr. Hurley, may have erred in relation to the existence of the inter twin membrane. In the circumstances, I find that the fifth defendant was negligent in failing properly to investigate the conflict existing between Dr. Hurley's finding on chorionicity, which I have found to be clearly one of monochorionicity, and the later assessments of dichorionicity, including his own. It is obvious that, had there been any contact or consultation with Dr. Hurley with a view to clarifying the diagnosis or resolving the conflict, the results would have been clear. On his own evidence, Dr. Stuart volunteered a diagnosis of monochorionicity would have stood for the entire of the pregnancy, even in the face of Ms. Ni Scannaill's conflicting assessment.

119. I find also that, having failed to resolve the conflict, which would have led to a finding of monochorionicity, Dr. Stuart was also negligent in permitting a finding of dichorionicity in respect of the twins of Mrs. Cunningham, which included on the evidence his own confirmatory findings from the scan of the 6th May, to remain as the only assessment of chorionicity notified to Dr. Bowman, during the course of the pregnancy.

The Scan taken on the 6th July

120. As to this last scan taken at the ultrasound unit, Ms. Ni Scannaill's report, in its relevant part, states as follows:

> "Both breech today with the heads towards the right. No liquor discordance noted between the sacs, and plenty round each fetus. The second twin is the larger of the two. I still suspect dichorionic twins. Twin 1 on the left."

121. On chorionicity, the Plaintiff claims that the correct interpretation and meaning to attach to this report is that it confirmed the existence of a dispute between Ms. Ni Scannaill and Dr. Stuart on the question of chorionicity. It arises in the following way.

122. Mrs. Cunningham was due to have a scan on the 10th June 1998. This scan was taken, as it happened, by Dr. Stuart. The usual practice was for the mother to take her hospital file from the obstetrician's rooms to the ultrasound unit, where his instructions as to the scan to be taken, including any special requests, would be followed. On this particular occasion, Mrs. Cunningham gave evidence of looking at the file and she found a note on which was written what she understood to be "?Identical (MZ)".

123. During the course of the hearing, it was said by Mr. Penman that such a request made no sense, and that it was far more likely that it should have been read as "?Identical (M2)", meaning in effect, a query as to whether the twins were identical males. However, this evidence came very late in the day, was not put to any prior witnesses, and so, even if it were a more logical interpretation, I could not consider it for the purpose of my findings on the matter. In any event, I consider that there is little difference in reality between each of these. In each case what is being sought, according to the Plaintiff, is to discover whether the twins, already diagnosed as being of the same gender, are identical males.

124. The scan was duly taken by Dr. Stuart, and both Mr. and Mrs. Cunningham gave evidence that at that time, Dr. Stuart told them they were expecting identical twin boys. It was submitted on behalf of the Plaintiff that it was highly unlikely she and Mr. Cunningham would have misunderstood news that they were having identical twin boys. Mr. and Mrs. Cunningham both said in evidence they were delighted and very excitedly reported this event back to Dr. Bowman. Dr. Bowman in turn gave evidence of recalling them doing so, although not the details, nor the precise content of what they said.

125. Evidence was also given by the Plaintiff and Mr. Cunningham that when the next scan was taken by Ms. Ni Scannaill in July 1998, Mr. Cunningham asked whether she still considered the twins to be non identical as Dr. Stuart was of a different view. It was alleged on behalf of the Plaintiff that this is the reason why Ms. Ni Scannaill's report included the phrase "I still suspect dichorionic twins."

126. Mrs. Cunningham gave evidence that she was told there was a "bet" for 50 pounds about this, between Ms. Ni Scannaill and Dr. Stuart. Ms. Ni Scannaill while initially saying in evidence she had no recollection of any bet, later accepted Mrs. Cunningham's recollection as to the existence of a bet. I have to say that during the course of the evidence, I was struck by Mrs. Cunningham's recall of sometimes small incidental features or events arising during the course of her pregnancy, and I found her evidence to be given in a careful and truthful manner. I would have had little hesitation in accepting that her recollection of events such as the existence of a bet was probably very reliable.

127. The existence of such a bet was also accepted by Dr. Stuart. What the bet actually meant, or what the basis for the bet was, is an entirely different matter. I find that the evidence made it clear that this was a "bet" in the sense often found in the phrase "I bet you X that Y is the true position", or some such, but that, although Mrs. Cunningham understood the bet to be for 50 pounds, that was only a metaphorical sum and there was never any arrangement or agreement to pay 50 pounds or 50p, as Professor Stuart suggested, to anyone. It was more in the nature of "I bet you 50 pounds that X is more likely than Y".

128. As to what was X and what was Y, this is the real nub of the dispute concerning the bet. It is the Plaintiff's claim that the admitted question put to Ms. Ni Scannaill by Mr. Cunningham would have been interpreted by her as a challenge to her earlier determination of chorionicity, and that Ms. Brosnan's evidence confirmed this. The Plaintiff submitted that, despite Dr. Stuart's assertion, it would be most unlikely that a bet would be made between two persons both of whom believed the twins were dichorionic.

129. Ms. Ni Scannaill in evidence indicated that the basis for the bet was that she was of the view that the twins were not identical and she believed she was told by Mr. Cunningham that Dr. Stuart believed they were identical. Such a scenario is rejected by Dr. Stuart. In evidence he said that he could not have said to Mrs. Cunningham that the twins were identical boys, and that the most he could have said is that they were same gender twins. The reason for this is dependent on what is called the zygosity of twins. This is where the "Z" in the query sent by Dr. Bowman to the ultrasound unit appears to have come from, or was interpreted by the Plaintiff. Monozygotic, according to the evidence, means identical. However, Dr. Stuart said firstly that there was no dispute between him and Ms. Ni Scannaill as to whether the twins were mono or dichorionic. He also said that he could have offered no opinion as to whether they were identical or not, given that he thought the twins were dichorionic. He accepted he told the Plaintiff that the twins were both of the same gender that is to say, male. He also agreed he could have told the Plaintiff that the twins could be identical, but accepted it was unlikely that parents would use the phrase "identical gender twins" rather than "identical twin boys".

130. It was put to Dr. Stuart that if he and Ms Ni Scannaill were both of the view that the twins were dichorionic, both should also be of the view that there was only a 25% chance that they were identical. Therefore, if Dr. Stuart was saying that they were identical, it must follow that he considered they fell into the monochorionic category. Dr. Stuart disagreed. He agreed that in the case of dichorionic twins, it is less likely that they will be identical, something only in the order of 25%, but that in the case of monochorionic twins, there is a 75% chance of them being identical. He rejected the Plaintiff's contention that this higher percentage meant that when he indicated to Mr. and Mrs. Cunningham that they were identical – which he denied doing in any event – this meant he thought the twins were monochorionic.

131. In relation to the foregoing "bet" I conclude as follows. I am satisfied there was the type of bet which both the Plaintiff and Ms Ni Scannaill describe and which Dr. Stuart accepted might have existed, even if he could not recall it. I also accept that it was the type of "I bet you X that Y is the position", and nothing more, in terms of money or any such wager. I also accept that it is a way, as both Ms. Ni Scannaill and Dr. Stuart said, of encouraging a continuing interest in a particular and perhaps unusual pregnancy.

132. I accept the Plaintiff's understanding of what she was told by Dr. Stuart, particularly since it was reported immediately to Dr. Bowman, who also recalled the event, although not the content of the conversation. Even if I accept, for the purpose of argument that what was said was what the Plaintiff and Mr. Cunningham say was said, and I do not have to decide this definitively, I am nevertheless satisfied that the Plaintiff has not established that, as a result, there was a disagreement between Ms. Ni Scannaill and Dr. Stuart as to the chorionicity of the twins. It is possible, and perfectly valid, for Dr. Stuart to have taken the view that, even in the case of dichorionic twins, there was a 25% chance they would be identical, and in a bet, for Ms Ni Scannaill to be on the "winning" side with a 75% chance of success. While I do not doubt therefore, the existence of the bet, it is also obvious from the evidence of Ms. Ni Scannaill that her information on Dr. Stuart's position appears to have come from the Plaintiff or her husband. I

also note from her evidence that, although she then responded to that information apparently by the use of the phrase "I still suspect dichorionic twins", she did express surprise about this in her evidence, and also indicated what her knowledge of identicality and chorionicity in 1998 was, and it does not appear to have been highly developed at the time in the area of zygosity.

133. I do not therefore accept that the Plaintiff has established that Dr. Stuart considered the twins to be identical, or even if he bet Ms. Ni Scannaill that they were so identical, it followed that the acknowledged bet or dispute established that Dr. Stuart in consequence considered the twins to be monochorionic.

134. That resolves the position concerning the existence of a bet. However, the position also is that in the same report to Dr. Bowman, Ms. Ni Scanaill repeated her earlier diagnosis or indication of dichorionicity. There was evidence which made it clear, in that regard, that a finding of dichorionicity, if taken at that time, would have little value in terms of its reliability. It is not necessary for me to say anything further than that the repetition of the finding of dichorionicity by her at this time was also negligent.

The issue of Polyhydramnios

135. Finally, in relation to the scans taken at the ultrasound unit, the Plaintiffs claimed that the condition of polyhydramnios was present according to the scan taken in week 28 and also, although perhaps less clearly, in the scan at 32 weeks, and nevertheless was not noted by the fourth or fifth defendants. There is a complete dispute on the facts on this issue, and on the correct interpretation of the pictures available on this matter, which is a very technical area indeed. Polyhydramnios means an excess of fluid around one twin in comparison to the other, a type of imbalance between the two. But in the context of the existence of possible twin to twin transfusion, which is the real issue here, it is important to understand that in such event there must be evidence, not only of excess fluid in one twin but also lessened or reduced fluid, or oligohydramnios, in the second twin. Both must be present to be indicative of twin to twin transfusion syndrome.

136. The significance of this, according to the Plaintiff, is that if it is established that polyhydramnios exists, this ought to have been signaled. According to the Plaintiff, it would have been one more factor in the range of risk factors which an obstetrician would have had before him when considering early delivery or intervention in the pregnancy. As I understood this argument it was that, in such an event, it is therefore more likely the twins would have been induced sooner than the 20th August and, in the present case, born alive.

137. Professor Fisk said the evidence of polyhydramnios on the 28 week scans of Dr. Stuart was certain. He said that a deepest pool depth of 8cm or more indicated the existence of this condition. According to him, he measured the deepest pool of liquor in three of the pictures then available as being in the region of 9 to 10 cm. He also said that the existence of polyhydramnios is an indicator of twin to twin transfusion syndrome, and in that event, one would look for a deepest pool of more than 8cm in one twin and less than 2cm in the other twin. In the pictures, he said that the deepest pool was in the region of 3 to 3.5 cm. of fluid in the second twin. He said that the deepest pool of liquor in the first twin, in three of the pictures then available was being in the region of 9 to 10 cm. Professor Fisk said that a10cm measurement of the deepest pool indicates a moderate, not a trivial, degree of the condition. He said that this evidence would lead to much more frequent follow up, which was necessary to ensure that any evidence of twin to twin transfusion could then be treated by timely delivery. However, the scan report at 28 weeks was silent on the existence of polyhydramnios.

138. Dr. Stuart in evidence said that the figure he used was 8.8 cm. which was rounded up to 9 cm. In the course of the hearing, he measured the deepest pool as being just short of 9 cm. He said "you couldn't miss polyhydramnios" and that it was not present. In her evidence, Ms Ni Scannaill was unaware of the figure later mentioned by Dr. Stuart, and she said she considered the assessment of polyhydramnios to be subjective.

139. It was put to Mr. Penman in cross examination that there was nothing in the films retained from the scan of the 10th June, that is to say at 28 weeks, which showed that polyhydramnios was present. Mr. Penman disagreed. He said there was a vertical pool or around 10 cm on measurement. What he could not say, however, because of the absence of clear evidence of the dividing membranes, was whether all of the measurement belonged to one amniotic sac, or some to the other. He agreed however that for the purposes of considering possible twin to twin transfusion, there was no evidence in the pictures of oligoyhydramnios.

140. On the question of the acceptable ranges for such amniotic fluids, Ms. Brosnan, from the National Maternity Hospital said in evidence that the range used there at the relevant time, was between 3 cm and 10 cm, while Mr. Penman said the exact criteria used varied between units. The position in 2004 differed from just below 7 cm, but in 1998 the range would be somewhere between 8 and 10 cm. When it was suggested to him in cross examination on behalf of Dr. Bowman that since Dr. Stuart, Ms. Ni Scannaill, the peri natal clinic, Dr. O'Connor and Dr. Green (who had carried out the post mortem examination), all recorded the liquor volume as normal (with the exception of Dr. Green, who reported reduced volume in both sacs after death), it was unlikely they all had failed to notice polyhydramnios, he agreed that this was so.

141. On this issue, I find as follows. While, if taking Professor Fisk's evidence at its highest, it would appear that in 2004, or perhaps earlier in the United Kingdom, the range of acceptable amniotic fluid levels, in the polyhydramnios tests, would be in the order of 8cm. and 2cm for oligohydramnios, or even taking Dr. Penman's evidence that in 2004, an acceptable level for polyhydramnios would have been even lower at 7cm., nevertheless it became clear in the course of the evidence that at the relevant time even in the United Kingdom, the levels varied according to the particular units, a fact not challenged, and more tellingly that the position in Ireland in 1998 was that, at least at the National Maternity Hospital, the ranges were about 10cm and 3 cm for the deepest pools respectively of the twin with increased and reduced fluid levels, the range in the hospital being 8.8 or 9 cm. in the case of polyhydramnios. The Plaintiff argued that, even if that were so, the evidence established that Dr. Stuart who contended for an 8.8 cm measurement of the deepest pool, had not complied with his own measurements, since the measurements which he himself took in the course of the proceedings were in excess of this figure, and indeed in excess of 9 cm.

142. Having regard to the foregoing evidence, I am not satisfied that the Plaintiff has established that there was in existence at week 28 of the pregnancy, as evidenced in the pictures or thermal prints taken at the time, polyhydramnios, such that a possible twin to twin transfusion event might be of concern or likely. I am satisfied that even if the measurement was that given by Dr. Stuart, there was, on the preponderance of the evidence, no sign of the necessary oligohydramnios in the smaller twin. In that regard, there was no evidence that a figure as low as 2cm ever applied in Ireland. The amniotic fluid as measured or recorded in all of the other scans – leaving aside the scan taken at the death of the twins – was normal. And I also take into account the fact that Professor Fisk in evidence said that having examined the thermal prints for the 32 week scan, he found "no suggestion really of aberrant amniotic fluid volume in these pictures contained in the notes at this 32 week scan." Even therefore if it could be said that there was some evidence of the condition in the scans taken at 28 weeks, and I do not find that established, it is clear from the Plaintiff's expert evidence that it was no longer evident at 32 weeks, and I find therefore that it no longer existed at that time.

The Frequency of Scanning

143. I now turn to the question of the frequency of scanning of monochorionic and dichorionic twins. It is alleged by the Plaintiff that Dr. Bowman was negligent in failing to arrange for scanning of Mrs. Cunningham's twins at appropriate intervals. This plea against Dr. Bowman is made at two levels, firstly, that he failed to scan twins who were monochorionic frequently enough, and secondly that he also failed to arrange appropriate scanning for foetal growth in the period after 32 weeks. These two issues are only somewhat related.

144. As to whether Dr. Bowman ought to have arranged for scanning of the twins more frequently, the answer to this is really tied up with, and to some extent dependent upon, what kind of twins Mrs Cunningham was carrying. It is clear from this judgment that Dr. Bowman was informed, as a result of two scans carried out by Ms. Ni Scannaill and not countered by anything said by Dr. Stuart in his reports, that the assessment of the twins indicated to him that they were dichorionic, and he dealt with the pregnancy on that basis. I have previously found that although the twins were correctly diagnosed by Dr. Hurley, it was not the case that his report would have been understood by Dr. Bowman as indicating monochorionic twins, and Dr. Bowman clearly did not think they were.

145. On the first of the issues, I do not have to go into the evidence in any great detail. The preponderance of the evidence was that Dr. Bowman was entitled to manage the pregnancy as if it were dichorionic. Professor Fisk, for the Plaintiff, agreed that, having regard to the reports he received, Dr. Bowman was entitled to do so. There was ample evidence that, in the case of monochorionic twins, they are sometimes scanned more frequently or intensively, usually every two weeks as opposed to every four weeks than in the case of dichorionic twins, particularly in the second trimester, when they are more likely to suffer from possible twin to twin transfusion. There was, equally, however, credible evidence that either all the way through the pregnancy, or at the very least, after 28 weeks, monochorionic and dichorionic twins are scanned at the same frequency, namely, every four weeks. That being so, it could not be said that Dr. Bowman's actual scanning programme, up to 32 weeks of pregnancy was not within the legal test found in the Dunne case, supra. And I so find.

146. Having regard to the evidence, I am satisfied that, in terms of frequency, there was no negligence on the part of Dr. Bowman by reason of his failure to arrange for Mrs. Cunningham's twins be scanned every two weeks, or more intensively than dichorionic twins, given that he had valid reasons for believing they were dichorionic, and managing them accordingly, and given that, even if they had been notified to him as being monochorionic, the evidence also established it was not the inevitable practice that such twins be scanned every two weeks.

147. As to the claim that Dr. Bowman failed to arrange further scans for foetal growth after 32 weeks, it was accepted by him that he did not do so. In fact it became clear during the course of the evidence that Dr. Bowman personally only directed scans of Mrs. Cunningham on two occasions. His explanation of this was that he worked in tandem, or in a united manner, with the ultrasound unit in deciding on the frequency of scans. However, this was not entirely supported by the evidence of either Ms. Ni Scannaill or of Dr. Stuart. What Ms. Ni Scannaill said was that she was not the person who would decide when a next scan would take place, and indeed in the scans she took, there is no evidence whatsoever that she made any recommendation as to the period which should elapse until the next scan. On the other hand in both scans taken by Dr. Stuart, there is an indication as to when the next scan is recommended.

148. It was explained in evidence that while Ms. Ni Scannaill would have ultrasound and midwifery experience, it would not be part of her competence to take any obstetric decisions, such as when the next scan should take place. In clarifying the practice at the hospital to the court, Dr. Stuart stated that, precisely and only because he was an obstetrician as well as an expert in ultrasound, he was competent to and did recommend the next date for a scan in some cases, although he accepted that such a situation arose arbitrarily, since it was never clear to an obstetrician whether a scan would be carried out by him or by Ms. Ni Scannaill. To that extent therefore I do not consider that Dr. Bowman's evidence supported his contention that the programme for scanning of Mrs. Cunningham's twins was undertaken in any planned way, jointly with the ultrasound unit, as he contended.

149. It will be recalled that Dr. Bowman's patients, including Mrs. Cunningham, were under the care of Dr. O'Connor in July and early August 1998 when Dr. Bowman was on holiday. When Dr. Bowman returned, he saw Mrs. Cunningham on the 12th August. At that time a period of over five weeks had elapsed since Mrs. Cunningham had last been scanned, on the 6th July, in the ultrasound unit. At that stage of the pregnancy Mrs. Cunningham was more than 37 weeks pregnant. The issue concerns therefore only this latter period of the pregnancy. It is true she had been scanned by Dr. O'Connor in his rooms, and he had inserted into her chart, his findings in that regard. These did not include any measurements as to foetal growth, and Dr. O'Connor did not give any evidence in the case.

150. All witnesses who gave evidence on the question of scans, up until that point in the pregnancy, indicated that such scans are arranged initially so as to verify viability of the pregnancy, and to determine chorionicity if possible, and thereafter on a regular basis to check the growth of the twins as well as their wellbeing, particularly by reference to foetal growth, and also by reference to the status of the amniotic fluids surrounding the twins, as well as to their relative growth, apart from the independent growth of each twin.

151. All the evidence also supported such continued checks via scans, right up through the pregnancy, with the exception of chorionicity which, once determined, stands for the entire of the pregnancy, unless there is some exceptional reason for a change to be notified. As to the other indicia, the foetal growth, amniotic fluids and comparative growth in the case of twins, all feature on a continuous basis in the scans actually taken at the ultrasound unit of the hospital.

152. On this issue, both Ms. Ni Scannaill and Ms. Brosnan said in evidence that towards the end of the pregnancy, it is the foetal growth of the twins which is the most important feature indicative of their well being. In addition, Professor Fisk said in evidence that it is particularly important that foetal growth, as well as any discordant growth rates, and the appearance of the amniotic fluids, are determined by means of scanning at this late of the pregnancy, because these are the factors which may lead to the disclosure of problems, especially, as here, if there has not been a scan for several weeks.

153. Dr. McKenna, who gave evidence on behalf of the fourth defendant, said that at this stage in the pregnancy, it is preferable not to rely on what he called surrogate data, but rather to provide for scans, so that foetal growth can be determined. He accepted he was speaking rather speculatively on the necessity for scans at this late stage, because his evidence was that, in all cases, his practice is to delivers twins by the 38th week of pregnancy, if they are viable, so as to avoid the risks inherent in such pregnancies. His reference to surrogate data was to information garnered other than by ultrasound, such as by way of physical examination of the twins.

154. Mr. Penman gave a rather sophisticated view of the questions arising as to scanning at this stage. He divided his opinion into the difference between the obligation or necessity for further scans after 32 weeks, (a) from an ultrasound point of view, and (b) on the obstetric side, from the point of view of the delivery decisions to be taken.

155. He said that what alters after the critical period between 12 and 28 weeks is the ultrasound management of the pregnancy. From the point of view of ultrasound, it was not necessary and there was no obligation, nor was the practice universal, that further ultrasound scans would be taken after the 32 week period. From the point of the view of the management of the pregnancy, however, in terms of delivery, this would be a matter for the obstetrician. In evidence he said that a scan would not have given an indication of the eventual cause of the death of the twins. He did accept, however, that a physical examination for the purposes of assessing foetal growth would not be the way to proceed, and that the only reliable way to do so would be by means of a scan.

156. Dr. Stuart gave evidence that although in his own case, he scans all twins on every occasion when the mother is seen by him, and therefore by implication he would have scans at very regular intervals, he was aware that this was not the universal practice, but rather about one third of his colleagues might scan in all cases after 32 weeks, the remaining colleagues not.

157. As to Dr. Bowman, his evidence was that he was satisfied that the babies had been checked by Dr. O'Connor in his absence, that there was a clear indication in the charts that Dr. O'Connor had found the amniotic fluids to be normal around both babies, and he himself had carried out a physical examination of the twins. He therefore did not consider that a scan to ascertain foetal growth was necessary at the time when he returned from holidays, at which stage Mrs. Cunningham was almost 38 weeks into her pregnancy.

158. I found the evidence on this aspect conflicting, and not always persuasive. It seems to me very strange, as a non medical person, that the evidence established that at all times during the course of a pregnancy of dichorionic twins, as these were considered to be, it was the standard practice that they be scanned at least every four weeks, for, inter alia, foetal growth, and for other matters such as amniotic fluid. Then it would seem that, although such twins can be the subject of, for example, twin to twin transfusion – although rarely - or of restricted growth, or of discordant growth as between one twin and the other, with possibly very negative results, or other complications inherent in having twins, it is suddenly no longer standard practice, after 32 weeks, let alone necessary, not to say even essential, to have a scan every four weeks to check for foetal growth. Although both sonographers in evidence said that scanning for foetal growth is essential and ever more important in late pregnancy, and Dr. McKenna appeared to support this, in the post 38 weeks period, it is nevertheless the case that the evidence of several of the obstetric witnesses was to the effect that this was not necessary in the late stages of pregnancy, in the sense that it is not the inevitably required or standard practice to do so, and that there is a reasonable body of obstetricians who do not do so.

159. In the circumstances, and having regard to the legal principles set out above in the Dunne case, supra, which, although setting a very high bar for establishing negligence, and while making no distinction between liability in respect of normal treatment or monitoring during the course of a pregnancy, as here, and liability in respect of urgent exceptional or critical intervention in the course of an emergency, and which jurisprudence I am obliged to and do follow, I must find that there is no negligence on the part of an obstetrician who does not, in the course of the management of dichorionic twins or of monochorionic twins thought to be dichorionic, provide for scans for foetal growth of those twins, in the period after 32 weeks of pregnancy, or in the present case, after 37 weeks, regardless of the known risks attaching to such twins.

Causation

160. I have not considered the allegation of failure to diagnose discordant growth restriction as a separate ground, as it is contained in the Plaintiff's submission that had there been a scan, it would have disclosed such growth restriction, and therefore Dr. Bowman would have delivered the twins earlier. I have already found that there was no obligation to carry out such scans, and I make no further findings on this.

161. I now turn to the claim arising in relation to Dr. Bowman's failure to deliver the twins when requested to do so, or to do so earlier than full term. Mr. McGrath on behalf of Dr. Bowman objected to any claim on this basis on the grounds that in the opening, no such claim is made. I agree, but in case I am held to be wrong in that, I propose to deal with it simply as part of the causation issue.

162. There is no doubt that Mrs. Cunningham was feeling very uncomfortable in the late stages of her pregnancy, and was a little anxious, as is clear from the evidence and her additional visits to the hospital during this period. Dr. Bowman took the view that her cervix was not suitable for delivery at the time, namely the 12th August, and indicated that, if she had not gone into labour in the meantime, he would arrange to have her induced on the 20th August, eight days later.

163. As to whether he should have arranged in these circumstances, for a cesaerean section, as requested, I am satisfied that the evidence, including that of Mr. Penman and of Dr. McKenna, was that, although in some cases this is a matter decided jointly between the pregnant mother and the obstetrician, nevertheless there is no obligation on the latter to accede to such a request, merely because that request is made. Dr. Bowman was entitled, all other things being equal, to take the view that he would ensure Mrs. Cunningham's twins would be born by induction or otherwise shortly thereafter, and the evidence was clear on this. This is a medical decision, and in the absence of negligence, which I do not find established, I consider he was within his entitlement, reasonably, to provide for the early birth of the twins, by a proposed induction or otherwise, having regard to the fact that in his medical opinion the cervix was not conducive to labour at that time. Nor do I consider that, as a means of birth, he was obliged to opt for a caesarean section as opposed to other acceptable means of inducing the delivery.

164. However, the second matter which arises on this issue is far more complicated. The Plaintiff submitted that had the twins been correctly diagnosed as being monochorionic, they would in fact have been born earlier, and would have been born alive. The evidence was of course that the pregnancy was dealt with on the basis that the twins were dichorionic.

165. It was Dr. Bowman's uncontested evidence that in the case of monochorionic twins, he considered that they were "riskier" than dichorionic twins. They required, he said, closer monitoring and minding than in the case of dichorionic twins, and he was very pleased, for that reason, to have received confirmation that they were dichorionic. In evidence he also said that had he known that the twins were monochorionic, he would have had what he called a "low threshold" for intervention in the delivery of such twins. I understood his evidence to be general, as to the precise nature of the intervention which he might adopt, but specific in that there would have been some definite form of intervention at an early date, to ensure the twins were delivered promptly.

166. It is worth considering his evidence in that regard. He said that had he known on the 12th August 1998 when he returned from holidays, that the twins were monochorionic, he would have made arrangements to deliver the twins within a day or perhaps two days. And he accepted that in such an event the twins would have been born alive.

167. The Plaintiff invoked the "but for" theory enunciated in Law of Torts, McMahon & Binchy, 3rd ed. 2001. It did so in relation to the failure by Dr. Bowman to arrange a further scan for foetal growth after the 12th August which it submitted would have disclosed that the twins were at risk. I have already found that he was not obliged in law to do so, and therefore the "but for" test does not arise under that head of claim. However, the "but for" theory was also invoked in support of the Plaintiff's contention that the loss of

the twins was caused by the negligence of Ms. Ni Scannaill and Dr. Stuart to diagnose and notify Dr. Bowman of the true chorionicity of the twins.

168. The position is as follows. Ms. Ni Scannaill knew or ought to have known that her opinion would be relied upon by Dr. Bowman in the management of the pregnancy, and Dr. Bowman did rely on it. He said clearly that had he known the twins were monochorionic, he would have delivered on or shortly after the 12th August 1998. I have found that Dr. Bowman was entitled to accept the diagnosis made, and repeated, by Ms. Ni Scannaill as being the correct assessment of the chorionicity of the twins. This acceptance by him was reasonsable, according to the evidence. Dr. Stuart, as the supervisor of Ms. Ni Scannaill, must be responsible for her findings, and indeed stood over them, he had himself checked for chorionicity, and wrongly diagnosed it at a time in the pregnancy which was acknowledged as being suboptimal. He took no steps to resolve the conflict existing with Dr. Hurley's report, and on the contrary, allowed the erroneous diagnosis of dichorionicity to remain the only diagnosis made to Dr. Bowman in circumstances which are already set out in this judgment.

169. Further, as already mentioned in this judgment, all the witnesses agreed, or at least none disagreed, that had the twins been delivered prior to the 17th August, or in the alternative, a day or two after August 12, they would have survived. There was no medical fact proved to the court to have existed which would have prevented their safe delivery at that time. Therefore, the Plaintiff argues, but for the misdiagnosis of chorionicity, and the failure to make the appropriate enquiries with Dr. Hurley, which would have resulted in the twins being diagnosed as monochorionic, and all of which acts or failures constituted negligence, the twins would have been delivered early and would have been born alive.

170. It was submitted on behalf of Ms. Ni Scannaill that the evidence of Dr. Bowman, in particular his assertion that he would have delivered the twins had he known they were monochorionic, had to be viewed against what he had said in writing shortly after the death of the twins, as well as against his answers relating to Dr. Hurley's letter. Further, it was submitted on behalf of Ms. Ni Scannaill that, since Mrs. Cunningham had been on a particular medication prior to her pregnancy, Dr. Bowman had clearly considered it was far more likely her pregnancy was dichorionic, since it was recognized there was a high rate of such pregnancies after that type of medication.

171. None of the evidence presented suggested to the court that the fact that Mrs. Cunningham was on certain medication, or that if there was a high rate of dichorionic twins with mothers taking such medication, would in any way override the obligation arising when ultrasound scans are, as here, carried out – several times. I reject the argument put forward on behalf of Ms Ni Scannaill that Dr. Bowman's responses to questions concerning Dr. Hurley's scan bring her defence further, or establish that Dr. Bowman considered, independently, that Mrs. Cunniingham's twins were dichorionic.

172. I am satisfied that there is no legal obligation on an obstetrician to deliver twins of the type Mrs. Cunningham was carrying, at a particular stage in the pregnancy, or in week 37 or 38 as, for example was Dr. McKenna's practice in relation to all pregnancies, in order, as he said, to avoid complications arising with such pregnancies. Nor was there an obligation on Dr. Bowman to deliver immediately after the 12th August. However, it is more than clear from his evidence that (a) he had a healthy respect for the complications which a monochorionic pregnancy might involve, (b) had he known that Mrs. Cunningham was actually carrying monochorionic twins rather than dichorionic twins, which he knew to be less problematic, he would have had what he called a "lower threshold" for intervention; and (c) in the specific case of Mrs. Cunningham, had he known they were monochorionic, he would have delivered the twins within one or two days of the 12th August, and in any event prior to the 17th August 1998.

173. In such circumstances, I am satisfied that the negligence both of Ms. Ni Scannaill and of Dr. Stuart, in the present case, although both of them were skilled and experienced, caused the twins to be still born in that, but for their negligence as found in the judgment, the twins would have been delivered and would have survived birth.

174. Having regard to the foregoing, I find that no liability attaches to Dr. Bowman for the death of the twins of Mrs. Cunningham. However, I find that both Ms. Ni Scannaill and Dr. Stuart are liable to Mrs. Cunningham in respect of the death of the twins.

175. As to the allocation of the responsibility between Ms Ni Scannaill, and Dr. Stuart, I think it would be difficult to do so in any real way. Having regard to the findings of negligence which I have made, it is clear that these were interlinked considerably, both as to the diagnoses made and remaining on the file as notified to Dr. Bowman, and also as to the conflict existing between those diagnoses or assessments and Dr. Hurley's report, as well as their understanding of the same. However, it was claimed by Dr. Stuart against Ms. Ni Scannaill that she had failed to follow accepted standards of practice by failing to bring the conflict existing between her assessment and that of Dr. Hurley, to Dr. Stuart as her supervisor, and therefore failed to furnish him with an opportunity to give a second opinion, or to contact Dr. Hurley for clarification. I found Ms. Ni Scanaill to have been negligent in that regard. However, the evidence equally was that the materials relating to Mrs. Cunningham were at all times presented, as a single unitary file, to the ultrasound unit at the hospital, and therefore, there was nothing missing from the documents before Dr. Stuart when he carried out the scan on the 6th May and assessed the chorionicity of the twins, agreeing with Ms. Ni Scannaill's results, although not expressing a view on the same. He therefore had the same opportunity to resolve the conflict at that time as when Ms. Ni Scannaill took her scan in February. He had exactly the same material available to him in May 1998, namely the report of Dr. Hurley, and the report of the scan taken by Ms. Ni Scannaill, which threw up the conflicting assessment. I am not satisfied that the mere failure by Ms. Ni Scannaill to bring the conflict to his attention in February 1998, even though negligent, could alter materially, the liability or the extent of the liability of Dr. Stuart. I therefore find that they were both individually liable for the unfortunate death of the twins.

176. The first named defendant was sued as the hospital in which the ultrasound unit was operated and from which the negligent scanning emanated. It was at all time clear that, as to Ms. Ni Scannaill, she was an employee of the first named defendant, and it is therefore liable for her negligence. As to Dr. Stuart, it became clear during the course of the hearing that his particular status at the hospital was unusual. He is a consultant obstetrician, with a specialty in ultrasound, but was not sued in that capacity. Although not originally employed by the hospital to run the ultrasound unit, because of his expertise, he has in fact done so on the instructions of the hospital. It remained unclear to me whether he was, in that particular capacity, an employee of the hospital, and I will hear counsel in relation to that matter, if I am asked.

177. On the separate issue of counseling, which is not associated with the death of the twins, I have made no findings. If counsel wishes me to, since some evidence was given on this matter, I will address the issue, although it is not clear to me whether all parties consider that they have given their complete evidence on this issue. It is not, in reality, associated with the medical findings, as such, and therefore it was not necessary for me to address it in the course of this judgment.

178. Finally, although in certain, but not all of the written submissions, legal submissions were also made in connection with the defences raised under the Civil Liability Act as well as the Statute of Limitations, I have not dealt with these. As I mentioned earlier in this judgment, I am concerned only with the negligence, if any, arising from the medical treatment delivered to Mrs. Cunningham. The

remaining legal arguments arising out of the defences are ones of significant complexity, and may, on a certain view, raise issues of a constitutional nature. I deemed it prudent therefore not to deal with them, although they were dealt with in some of the written material submitted to me.