RESUMING 11.40 A.M.

MR BORICK: I hope I've correctly identified the issue where the jury, in the light of the new material, might have a reasonable doubt about proof of the element of the crime charged.

I think basically when I read my friend's outline overnight and this morning that's the issue for your Honour.

HIS HONOUR: I'm sorry, the issue for me?

MR BORICK: Is whether a jury, in the light of the new material, may have a reasonable doubt about the proof of the elements of the crime charged.

And the second major proposition we have advanced is that the issue of expertise is to be decided according to the relevant legal principles which are well-known to all of us, and that that does not depend on the resolution of the scientific controversy. In other words, I'm submitting to your Honour that you can't go through a process of resolving the scientific controversy and then go to the legal principles. You go to whether they have achieved that by their training study and experience.

That's all I really want to say about that because the principles are clear, and your Honour knows what the issues are. My friend is arguing that they are not experts and we say they are.

HIS HONOUR: Do you say I can't consider their evidence in determining whether they are experts?

MR BORICK: You consider their evidence. They are claiming that, because of their scientific - particularly Eleni Papadopulos, because of her background as a physicist, she has an understanding of the basic sciences involved in this case and that she is able to develop an opinion and provide an opinion to the court on the issue of pathogenesis; that is, not only the cause of AIDS, if you like, but the issue as to whether HIV has ever been isolated or purified. I'm sure I don't need to take your Honour through that.

It's very clear what the difference between them is.

Our submission is that they have established themselves as an expert, that there is a scientific controversy and that that controversy can't be settled by your Honour accepting that the other seven or eight witnesses called all say that in their opinion Papadopulos and Turner are not experts.

HIS HONOUR: And in their opinion there is no controversy as I understand it.

MR BORICK: That's so. If you accepted those experts, then there is that controversy. Going back to the first point, it would then be a matter that could be put to a jury.

I think, your Honour, probably we are just looking from a practical point of view as lawyers. If there were to be a retrial then the prosecution would be put on notice that they have to prove that HIV exists and it causes AIDS. Professor McDonald would be called to give his evidence and Professor Gordon would have to be called. Professor McDonald would be cross-examined in much the way he was this morning and that would be before the jury. And if defence counsel were addressing the jury they would say 'Ladies and gentlemen, on the question of HIV causing AIDS that's our case and it's for you, not for his Honour or anybody else, you the jury will decide this'.

Obviously it would have to be put to Professor McDonald in cross-examination what the views of the Perth group were. Depending upon his answers, but I would envisage then that the defence would call the Perth group, they may call others like Duesberg or Mullis, it's hard to look ahead, but at the end of the day in the jury trial the jury would have been made very well aware that there is a controversy, they would be made very well aware of other experts, the prosecution witnesses would say they shouldn't take any notice of the Perth group. Fundamentally that's an issue for the jury not for your Honour. That's why my starting point

is whether it could make a difference, the jury deliberating is an important one.

The dissident views I've summarised by Professor McDonald at pages 1376-1377. I'm not going to read them out. The two major ones are the very strict view held by the Perth group; the purification issue and the view held by Mullis and Duesberg that HIV does not cause AIDS. They are not contradictory because the Perth group and those who support them are saying you can't say that HIV causes AIDS because you haven't scientifically isolated HIV.

By the way I make this clear now: we are not saying, as I understand it, HIV does not exist. The position has always been HIV has not been scientifically proven to exist.

So they are the various dissident views. I want to come now to some of the ways in which it is said that one can prove that retrovirus known as HIV exists. I think the best way for me to present my argument on this is to take you to Dr Gallo's evidence in relation to two specific matters.

At p.1293 he is in cross-examination and I take you to line 30:

'To take the first four points that you made in your report to the court in combination ... 119 patients that we -'

Then I went to p.1294:

'How many was it. A. Well, I think we isolated in almost every patient with AIDS that ... than the healthy population.'

He went on to say at 1302:

'It depends on the ratio of the virus to the cells -'

I've moved to a different topic there. Can I take you back to his evidence in relation to the denominator.

Has your Honour got his various papers there?

HIS HONOUR: Yes. Give me the exhibit numbers, yes.

MR BORICK: If your Honour could have the papers in front of you.

HIS HONOUR: Which ones are we talking?

MR BORICK: The Gallo papers.

HIS HONOUR: Do they have an exhibit number? That would help me. P86.

MR BORICK: P86. If you go to p.502 of the second science paper. The number tested adds up to 48.

HIS HONOUR: 18 -

MR BORICK: 3, 3, 13, 10 and 1. That's where you get the 48 from, and the number tested is the next column which gives you 119. Now the figures down the bottom -

HIS HONOUR: Where do you get the figure? By adding them up?

MR BORICK: Yes. So the clinically normal heterosexual group, that's where you get that figure. That produces the figure of 40.3% which we put to him. We were right in what we put to Dr Gallo. And his response was typical of him, he was aggressive, that's his style but he was very aggressive and this is his papers and he couldn't accept that the denominator which we were referring to was correct. Quite what he meant at p.1294 when he said:

'You are right, judge, I don't accept the denominator ... wouldn't save the cause.'

I don't know what your Honour reads into that what he meant. But if he is meaning to say it doesn't represent an argument that HIV causes AIDS, which would really represent our position - so, that's his evidence in relation to the actual figures. And then we turn to his evidence about the electron micrographs. If your Honour goes to p.1302 at line 23:

'In May 1984 did the group that you were with ... to publish any electron micrographs.'

Over the page, I'll take you to 1304, line 20:

'In the first of the two papers that I've taken you to ... that there was a laboratory contamination.'

If you look at the papers again, if you go to p.504 of the document P86.

HIS HONOUR: Yes.

MR BORICK: It's called figure 4 and the top row is HTLV1, the second row is HTLV2 and then the third, that's the bottom row, is patients described as presenting with AIDS.

CONTINUED

MS MCDONALD: Those three photographs, which are not photographs but he was claiming them to be, and subsequently you had understood him to be saying well, there was only one mistake, but in fact it was the three, and it was those three that he was referring to.

Now associated with that I took you through the evidence where we said we published electron micrographs of RF, RF as a person and he was using those photographs, as I understand him, to prove his case. RF as a patient is mentioned only in the fourth paper at 497 to 500. Table 2 on p.499 of the text on detection, isolation and continuous production of psychopathic retroviruses, HTL VL3, from patients with AIDS and pre AIDS. That table shows the column headed 'Electron microscopy' and the entry for RF is ND.

HIS HONOUR: Which page are you looking at now?

MR BORICK: P.499. ND is not defined in the legend in table 2 but in the legend in table 1, p.498, about eight lines up from the bottom, ND means not done. So if ND in this paper means not done, then RF, electron microscopy, was not done. I will take you back to his evidence at 1302:

'We also published electron micrographs of RF'

And further down, at 25:

'Did you listen to anything I said? Are you listening ... at RF, look at the paper, you will see RF.'

Further down at 32 we showed electron micrographs. I suppose I was listening to him but I didn't know then, when he was in a sense yelling at me, that RF - photograph, but that's the fact of the matter.

So what I'm putting to your Honour is, those two examples I have given you about Dr Gallo you should treat him with the greatest of caution. He didn't give you straight answers in relation to the inquiry that went on for nine years, bullying his way throughout, his way of doing things.

I know your Honour may well have a different view about his approach to the oath but that proved very

strongly that he knew that the oath was important, whether he would swear or affirm. He must have known in giving his background knowledge that there is nothing different between the United States or anywhere else as to taking of the oath. It was, at the very least, a demonstration of a cavalier approach and when you combine that with the examples I've just given you where he has just got it wrong, Gallo should be treated with the greatest of caution, and that of course means that when you look at the issue of Gallo you are really looking at the person who is supposed, with Montagnier, and they thought about that between themselves, but he is the founder of all this and you see people continually going back to say 'Well here's the start and here's what we are relying on'. A passage in Dr Dax's evidence, which she did, she specifically relied on Montagnier and, by implication, on Gallo, and I, of course, am acutely aware that some of the witnesses have said 'times have changed, things have moved on' and all the rest of it, but the foundation for the whole of what Professor McDonald described this morning as the notion - I underline that word, it's his word - the notion that HIV causes AIDS, stems from the work of Montagnier and if Gallo and the foundation was flawed then the people who come along now and over the years who have argued that it should be looked at much more carefully, in other words there is a controversy, well then they should be taken seriously, in my submission.

I mentioned Dr Elizabeth Dax and Dr Dax did not claim expertise in any area other than tests for HIV, that was at transcript 855, she said that there were very few ELISA's used in Australia any more, transcript 856. That statement is inconsistent with the evidence of all the other witnesses and just for example, Professor French at 793. All of them said that the ELIZA is still being used. Obviously it was still being used in 1997 when Parenzee was being tested, and the surprising proposition put to you by Dr Dax, who is

regarded as the expert in this area, is that very few ELISA's are used in Australia any more, and that is of significance when you find that the prosecution experts are not all speaking with one voice on a very important issue.

One would have thought that if the Perth Group of Australia were out of touch, so out of line with all scientific thinking that it would be been very easy to dispose of them with almost one voice but it didn't. I know my friend says that she called all these people because there are different areas of expertise involved but certainly they did, each of them, from time to time say they are not experts, for example they all said they were not experts in electron microscopy, for that matter so did the defence experts. And there's a submission I want to make on microscopy, while I'm thinking about it now, that is you really haven't got any evidence at all on electron microscopy.

People have told you about photographs, we should go back to what would happen if this were a homicide trial and you were looking at photographs of a deceased, it would be an absolute requirement of any photograph that came along that you would need to have explained who took it, when it was taken, what it was taken of, and you'd look for what I call, in a broad sense, the source. Not one single photograph that has been put to your Honour has the source identified. Dr Dax you will recall said she couldn't remember whether she had seen it, Dr Dwyer said he could remember seeing some words from Semens but he couldn't remember where he had seen them, but overall you ought not to, in my submission, as the judge in this case or any of us as lawyers, try to interpret these photographs that were put before you because we haven't got any evidence, we don't know what they are supposed to mean.

Professor Cooper, he did not claim expertise in either virology or the HIV test kit results. Professor Kaldor, his evidence depends upon the accuracy of the

various test kits that were used over the relevant period of time, and Professor French acknowledged that AIDS is caused by factors in addition to HIV and those factors have not been established.

I refer to the mathematical proposition that I put to Professor McDonald this morning, H plus X equals A, where H means HIV and A can mean CD4 cell depletion or AIDS. There can be no doubt on the evidence from the Rodriguez Study that X equals - if you took 100 as the mean - X equals 95. So as a matter of putting a case to a jury, if your Honour were to put yourself in the position of defence counsel and you had that sort of concept you could put it to the jury as something they could easily understand. You've got all these factors which can cause AIDS but 95 of them you don't know what they are. It's just supposition. And to go on from there to make the statement that 'In my opinion' - put in inverted commas - 'In my opinion, HIV causes AIDS', without knowing how or why, is an issue which would be put to a jury and a jury would have to make their assessment of that and could make an assessment of that. They are not being asked there, in that situation, to look at some of the very complex issues we have had to try to get our heads around in this case. They can look at something that's very straightforward and very easy to grasp.

I'm not going to take your Honour through the comparative study -

HIS HONOUR: It's your chart, comparative chart.

MR BORICK: Yes, chart. It speaks for itself, and we have highlighted some of the differences, but there is just one answer I'd take you to, it's p.13, item 31 'It was determined ... and all other RNA's.' And that was accepted by French. But it was Gallo's answer which is interesting, further to my submission to you about treading carefully. His answer was: 'Well, you do do that but the answer is really ... want it very much but of course the answer is no.'

That's at p.1291. That's basically one of the most unscientific answers I've heard from a scientist, ever.

The diagnosis of HIV in 1997, and we have got the specific example of our client in this case, it was the positive ELISA, a Western Blot indicating a reaction, the IMSV print-out that your Honour is familiar with, that's the Higgins document, viral load and CD4 cell counts. You've heard enough to know precisely what our position on ELISA and Western Blot are and therefore I don't need to go through that now. You know what our position is on CD4 cell counts and you know what our position is on viral load and your Honour will recall the figures that we put to each of the witnesses, that Turner referred to, showing they are just all over the place. So you know our position on all of those and in our submission no unique genetic sequence has ever been produced to this court.

What I am going to do now, without reading out a lot, is to just give you references to where the various witnesses have referred to genetic sequence, and I'm going to refer to just some passages in it but I'll be able to provide you later today with a copy of the document I'm holding where I have pulled the relevant pages together. I'm sorry I just didn't have it ready before.

Cooper, at 706, was cross-examined about the gene bank at Los Alamos and it was put to him that the director, Mr Foley, said that the HIV genome is a Tly (a) RNA which originated from material which was not purified, and he said 'I'm not aware of that'.

Professor French at p.789 says:

'In my mind it has definitely been resolved, HIV is a ... to the virus that don't occur in any other virus.'

P.791 he has referred to:

'The RNA is the sequence of the viral RNA known to measure the amount of viral RNA.'

And at the same page, line 15:

'We can also use that complementary DNA to seek ...
parts of the viral genome.'

A bit further down the page at 28:

'So we are interested ... transcriptase enzymer.'

Dax at p.897 said:

'You take that virus, treat it and sequence it ...
related to other viruses.'

And at 918 she said:

'I have read this several times over, this gold standard
... call it isolation of the virus, the gold standard.'

CONTINUED

HIS HONOUR: What page is that?

MR BORICK: P.919. She says there:

'I think the gold standard these days is the genomic sequence.'

Certainly she didn't understand the gold standard, now she says she thinks it was the genomic sequence.

Dr Dwyer, at p.959, mentioned the genetic sequences. At line 25, he said:

'Rather than detecting the whole ... that is unique to the virus.'

At p.960, it was referred to him the genomes are stored in a database at Los Alamos. At that page also, he was asked:

'With a HIV genome, are there ... it certainly is complex.'

At p.961:

'If you go across the whole genetic material ... and the virus can be taken very quickly.'

Further down that page:

'It can vary within one person. Even within the cell of a person you can see different HIV strains.'

At p.972, cross-examination, I put to him:

'You referred to a number of occasions ... but there are two separate sequences.'

Further down that page, he said he was not aware of p24 being found in breast cancer:

'I'm aware of HIV-like sequences being found in breast cancer.'

Then Professor Gordon, at p.1027, said:

'We know that not every HIV virus has exactly the same sequence.'

At p.1036:

'So, for example, some endogenous retrovirus ... that's in the literature.'

At p.1092, I asked him:

'Can we look at a sequence. Can we see it on paper ... look at any article you are referring to.'

At p.1093:

'I'm putting it to you directly because you say it ... which contains very large numbers.'

No such sequence, so far as I understand it, was ever forthcoming.

Then Gallo's evidence on sequence is at p.1279. He said:

'The full genome had been completely sequenced in 1985 by us and by the Pasteur Institute.'

Further down, he says:

'HIV is unique. Its sequences are not ... endogenous and viral particles.'

Professor McDonald said, at p.1353:

'When they identified the gene sequence and could ... such as they would grow in.'

At p.1361:

'I think all we know about what the argument is ... outline of what a gene is.'

Then, at p.1362, line 17 - this is significant - he says:

'On the one hand, you could use the whole 9,600 ... part of the make-up of the HIV.'

If you go to the last document that was tendered - I think it is the last document - P85, this is the report from Professor Gordon which he directed to me. I'm not sure whether your Honour has had a chance to look at this because there was no evidence really associated with it.

HIS HONOUR: This seems to be a letter from Gordon to you.

MR BORICK: That's right, dated 12 February.

I understand what happened, Professor Gordon, I said to him 'You can provide me with some further information about sequence analysis', and he then corresponded directly to me, but it went, obviously, to my friend, then to your Honour, but no evidence was given.

HIS HONOUR: Yes.

MR BORICK: It is not a particularly easy letter to understand in one sense, but in another sense it is

because he tells me he is pleased to provide information and he says:

'The initial approach taken was to access a complete ... nucleotides 336 to 1838.'

There are, in fact, as Professor McDonald has told us, about 9,600 bases, from which, of those 9,600 bases, someone selected 336 to 1838, which represents approximately 1,500, and 1,500 sequences out of 9,500, that is, 16%.

So, what you are in fact looking at - this is one of the points Dr Turner was making - is a very small region of the whole sequence. So, you can say that the sort of information you are getting here is something to do with the genetic sequence, there is a base to it, but it is not looking at the whole thing; you are only looking at a part.

If you are just looking at a part of it, a very small part of that - and you have, as Professor McDonald says, this 30% variation, he says 'About 30% of the genes might drop out or alter' - how is it then possible to say, when you are looking at a small part of the whole sequence, that you then have got a genetic sequence?

The document that was tendered at trial, that big long graph, that purported to show the comparison between the alleged victim and Parenzee, Crispin - her name is still suppressed, I think - then that is not a genetic sequence as such; it is a comparison between the two. Dr Higgins said they are not the same. They are similar, but they are different.

Professor McDonald, when he was talking about that in his evidence, and your Honour reminded him it had been presented at trial, this document, he said he looked at it and he said they were the same. They are not. They are not a genetic sequence, they are not proof that here is a unique genetic sequence unique to Parenzee.

Obviously - it seems to me obvious anyway - if you

can come up with a unique genetic sequence, looking at the whole of the sequence, and say 'Here it is, here is Crispin's', we wouldn't be here, there wouldn't be any argument.

The final point I want to make about sequences is that the sequence comparison used in the final genetic tree is based on an analysis of only 1,100 bases out of 9,500 bases; that is, about 12% of the total.

Professor McDonald said at p.1364 that the graph tendered at trial is the gene sequence of Parenzee's virus. That implies it is the whole virus, and that, with respect, is clearly wrong. The question is:
'Is it possible to be more of a genome ... might be revealed.'
Professor McDonald pointed out, at p.1362:
'HIV is prone to a lot of ... might drop out.'
That leads to an analogy:
'In the early days of forensic science, it was ... A, AB, B and O.'
He repeatedly pointed out:
'In cases it became impossible to look at another ... than has been presently shown.'
Dr Higgins at trial apparently said that:
'Crispin was about 1% from Parenzee, the person ... this virus in this person and that person.'

On that topic of following the genetic tree, I remind you of the case in England which you have been referred to. As at present, you still have only got the direction to the jury. I can tell you we are still trying to get the actual transcript of the evidence, and it is proving a much more difficult task than what I had envisaged, but we are obviously continuing to try to get that so we can fill out the reference to that case.

Finally, I remind you on the issue of scientific controversy that there is the Argentine case in 1997 where this issue was litigated and it was recognised there was a scientific controversy.

So, for all of those reasons, and they are

fundamentally these - the Perth scientists are experts, whether they are right or wrong, partly right, partly wrong - there is a controversy as to whether HIV has been scientifically proven to exist. Although I have not concentrated upon that in these submissions, it is because your Honour is fully aware of that issue, but the alternative argument, which doesn't depend upon the Perth scientists at all, it really is contained in the question I put to Professor McDonald this morning, it is a question we have put thought into, and if I had been standing up delivering this submission, that is what I would have been putting to you, but that is our case, in relation to HIV does not cause AIDS.

CONTINUED

In relation to the Montagnier paper, my submission to you about that is that Eleni Papadopulos gave evidence, and, on my understanding, it was uncontradicted as to the test that Montagnier carried out. She listed the criticisms and my understanding of the evidence is none of the witnesses for the prosecution have really challenged that proposition.

In my learned friend's argument at p.17, she deals directly with the issues that HIV has never been proven to exist and she starts with Montagnier and, by implication, Gallo. My argument on that is you can't rely upon those people.

P.24, on electron microscopy, that is pretty thin on the grounds, the argument there but it has to be because there is such little evidence from everybody as to what electron microscopy is all about. P.25, he refers in 3.121 of the entire HIV genome sequence, published by Gallo. At p.26, 3.127, he says:

'Our knowledge and research into the genetic ... now been developed.'

I understand they haven't been:

'Which are intricate enough ... variability of the virus.'

I think my friend should have explained to you what she meant by the genetic variability of the virus because that seems to refer to what I have just been arguing.

P.27, she refers to endogenous retroviruses and, of the four examples that are given, there are no references, except in the fourth one when there's a reference to some evidence in the footnote 75.

P.28, in relation to the question that HIV causes AIDS -

HIS HONOUR: Footnote 65?

MR BORICK: Yes. There is no reference of or any footnotes in I, II and III in the endogenous retroviruses. 'Does HIV cause AIDS?', which is 28. If you read her argument, it is very much - I'll call it the political, but the view that is held by people.

There is not a lot of science in that section. I think my learned friend really has to deal with the proposition that was put to Professor McDonald this morning, rather than to just go back and look at what everybody knows, the Durban Declaration and all the other - what I would classify as political documents.

I don't intend to put any further argument in relation to the sexual transmission. My friend says that Ms Papadopulos has fudged the figures, so to speak, and Ms Papadopulos says 'No, she has not'. She has taken their data and put her interpretation onto it. She is perfectly entitled to do that.

Already I have answered your Honour's query of me about the chapter from the textbook. That was put to her by the prosecution for a specific purpose. She referred to the issue of culture - again, I don't need to go over it, you have heard it enough times - she didn't rely on that book, she didn't present it as part of her case, she simply took out the passage from the chapter that she had been handed. That is not an example of fudging the evidence.

On the question of diligence, whether we should have found out about this, I submit it is impossible for anyone to have known that this scientific debate, which has been tucked away in the journals - it is never published anywhere, so far as I'm aware, where the general public could know about it. Everybody knew that HIV existed, that HIV caused AIDS and that was it.

There is no way that any lawyer could have known about this, unless they were told by the experts that were giving assistance to the court or giving assistance to the defence. Those that I spoke to didn't tell me anything about the controversy and, certainly none of the witnesses - Professor Gordon or Professor McDonald - didn't mention it to the court. They didn't mention it to the court because they, presumably, took the view that it was so way out, they didn't believe it. There is perhaps an argument that they should have. There is

no way that any lawyer, in these circumstances, could have found out about the argument that is now raised.

In my submission, your Honour should grant leave.

HIS HONOUR: Ms McDonald, do you want to start now?

MS MCDONALD: I would probably prefer to start after lunch. I won't actually be very long because I have prepared a very lengthy written submission and I don't propose to traverse through that. What I want to do is just deal with a couple of things that have arisen during my friend's submissions, which we weren't on notice about until he started speaking - things like the Gallo papers and so forth. I would ask to start after lunch. I can indicate, subject to anything that your Honour requires assistance with, I don't propose to be particularly long.

ADJOURNED 12.55 P.M.

RESUMING 2.17 P.M.

MS MCDONALD: Can I just indicate, in relation to my written submissions, I am proposing, if it will be of assistance to your Honour, to give your Honour a further document, another copy, where I have referred to exhibits or transcript references, it will actually include what the exhibit is and the name of the witness giving evidence at that point. I had wanted to do that but I ran out of time. At the moment there are just page references and exhibit numbers and I have set it out in that way so your Honour has all of the information.

The first point I want to deal with is one raised by my learned friend today and that is what this fresh evidence is. My learned friend raised the issue of what evidence may or may not be presented if there was to be a subsequent trial. Your Honour heard from two witnesses called by the applicant in this trial: Ms Papadopulos-Eleopulos and Dr Turner.

My learned friend, at the beginning of this whole hearing, expressly disavowed any reliance upon the proposition that HIV does not cause AIDS. Your Honour

might recall that occurred at the time that the respondent's expert reports had started to come in and they spent some time on the issue between the relationship of HIV and AIDS. My learned friend indicated to the court that wasn't a plank of their argument. It surfaced its head during the hearing. It is just not a useful exercise to speculate about what other evidence there might be out there that might be called - witnesses who might be prepared to say that they don't accept that HIV has been proved to cause AIDS.

The evidence before your Honour is, of course, that there are two experts who hold the view that HIV has not been proved to exist and they stand, if you like, on an island of their own, in amongst the other dissidents. I raise that in response to my learned friend's submission this morning, that there might be other evidence presented at another trial. In terms of this hearing, your Honour has heard what the fresh evidence is and it is limited to those two witnesses.

HIS HONOUR: Do they go on to say that if they're wrong about that, then it has not been proved that it causes AIDS?

MS MCDONALD: Yes.

HIS HONOUR: They do?

MS MCDONALD: Eventually they do. There was confusion when Mrs Papadopulos-Eleopulos wouldn't accept as an assumption -

HIS HONOUR: She had some difficulty working from an assumption where she didn't accept the basis.

MS MCDONALD: I took the end product of her evidence to be that that is another prong of their argument and that is one of the points that is raised on the home page of the website.

ADJOURNED 2.21 P.M.

RESUMING 2.23 P.M.

MS MCDONALD: Just whilst I am on that topic of this issue of HIV being the cause of AIDS, your Honour has

heard quite a bit of evidence throughout the course of this hearing, but particularly this morning from Professor McDonald, about the causative link, if you like, between HIV and AIDS. I'm sure your Honour will recall that my learned friend, this morning, put to the court that you can use some sort of mathematical equation: H, being HIV, plus X, equals AIDS. That really highlights a misunderstanding, if you like, of the causation that is involved because, really, what the witness has put to your Honour is that HIV leads to AIDS, but that there's a causative link in there, the mechanics of which aren't completely clear.

It is more a case of an equation of H leads to X, leads to AIDS. In putting it like that, my learned friend really highlighted what the misunderstanding was. It is not like there is 95% of something else out there that jumps in and leads to AIDS, but rather HIV leads to a consequence that leads to AIDS.

In that context, I just remind your Honour of P20, which was the response of those who were responsible for the Rodriguez study and that was a document not dissimilar to the Nancy Padian response, in which she attempted to make clear what her studies stood for. That document sets out, in absolute black and white, what the authors of that study say that their study stands for and it is not that HIV doesn't lead to AIDS; in fact, quite the contrary.

As they say at the beginning of para.3:

'There is absolutely no doubt that HIV is the cause of AIDS. Far from challenging the veracity of this statement, our work further confirms it.'

And then they go on and explain why they say that is so. I remind your Honour of that document, because it is all very well and good for my learned friend to provide his interpretation of what it means to the court, but your Honour has a document in which the people who were responsible for that very study have attempted to clarify what the proper interpretation is.

HIS HONOUR: Can you remind me of the source of that document? It seems it comes off a website.

MS MCDONALD: There's no issue, though, as to the integrity of the document.

HIS HONOUR: If there's no issue as to its integrity, then I can rely upon it.

MS MCDONALD: No. Likewise, the Padian document, that is also published on a website. The Nancy Padian document, that's the one where she comes forward and says -

HIS HONOUR: You have referred to that in your submissions, haven't you?

MS MCDONALD: I have but I can give your Honour the exhibit number again, though.

Can I turn then to this issue of genetic sequencing of the virus. I have attempted to set out what the respondent's position is in relation to that, based on the expert evidence, but to try and really put it in a nutshell, the situation, I submit, is this: many, many times the entire genome of the virus has been sequenced. Within the virus there are certain areas called the conserved areas, which are absolutely unique to HIV and, consequently, if someone is looking at the genome to determine if someone is HIV-positive, those are the relevant portions. There are other areas in the genome of the virus which are variable and it is those variable areas that are used for a couple of things; one being the contact tracing that Professor Higgins talked about during his evidence and; secondly -

HIS HONOUR: The antiretroviral treatment?

MS MCDONALD: Yes, precisely. The letter of Professor Gordon, which is P85, attempts to assist in understanding all that. I might just take your Honour through it.

And to give your Honour an overview before I go to the details: what Professor Gordon did was he went to a gene bank, I understand you can do this all on-line these days -

HIS HONOUR: Went to a what?

MS MCDONALD: A gene bank. He looked for the genome of HIV, he then focused in on one of those conserved areas, one of those unique areas to this HIV virus, and he then compared that to a number of human genetic profiles to look and see if the genetic profile for the conserved area was found anywhere else in those general human profiles.

So to take you back to the actual document P85; Professor Gordon says at para.2:

'The initial approach taken was to access a complete genome sequence of HIV-1 (accession number NC/001802).'

I just pause there to say my understanding is that is telling us there the virus he was looking at, the particular number given to the virus.

He goes on to say that was from the NCBI, which is the National Centre For Biotechnology Information USA, so that was where that particular profile was stored. He then says:

'Examined nucleotides ... P24 protein.'

What he did then was look at one of these genes that is unique to HIV, and that's the gag gene that was talked about in evidence, and he probably picked that one because there has been so much discussion about P24 because that's the gene that programs for that protein, and that involved looking at the nucleotides 336 to 1838.

So my learned friend is correct in one respect; yes Professor Gordon hasn't conducted a complete analysis of the genome of a HIV virus. What he has done is he has taken the whole genome of the virus and then he has selected one of these conserved areas for the purpose of demonstrating to the court that it doesn't appear elsewhere in the human body.

Professor Gordon goes on to say:

'This sequence was compared with a comprehensive set ... massive number of nucleotides bases.'

So 7,067 profiles were compared against this unique gag sequence of HIV. And there is reference there to what is called a blaston 2.2.15 program. As I understand it that is a computer program that facilitates juxtaposing one against the other. He goes on to say:

'The result of this was no similarity found.'

He does go on to say in the next paragraph:

'The gag sequence was put against the human ... of the gag.'

There might be little areas in there where there is some common nucleotides. He goes to give an example:

'The most significantly similarity occurred with the human ... will be approximately 11%.'

So, in my submission, what Professor Gordon is saying there is if you look hard enough you can find little bits of the gag gene within other areas in the human body, but there is only a very small overlap and such that, if you look at the whole gene, they are completely different and distinguishable. So in my submission in P85 Professor Gordon illustrates why it is that we say that the whole genome of HIV has been sequenced, it can be sequenced from any virus. As a matter of practice it would be completely unnecessary because normally you are doing there to see if the virus is there; you look at the conserved process.

If you are looking at the relatedness of the virus then you are focusing on these areas where there are differences. In that sense, very like the DNA evidence that we present in court where the scientists have selected areas on the various alleles where there is known to be difference because that will give you the best indication.

HIS HONOUR: With the number of alleles.

MS MCDONALD: Yes.

HIS HONOUR: Your submission is, as I understand it,

and I'm only asking you because I want to understand it - I'm sure Mr Borick wants to understand it too because he might want to respond - you are saying that Mr Borick's submission that they have only ever mapped part of the genome is incorrect.

MS MCDONALD: Yes.

HIS HONOUR: That the whole genome has been mapped but they don't analyse the whole of the genome every time that they are considering a sample.

MS MCDONALD: Yes. And perhaps, if there is any confusion that in part arises from the fact that the virus is known to mutate like it does because, as I understand it, if one were look at a genome of the virus from person X and compare it to the genome of the person Y and then compare it to Mr Z they are never going to be identical.

HIS HONOUR: I understand there are variations.

MS MCDONALD: That's right.

HIS HONOUR: But the 'base' will always be the same, if I can call it that, it might be the wrong scientific term. There will be certain basic readings which will be common to all, common to HIV?

MS MCDONALD: Yes. HIV P24 is an example of that.

HIS HONOUR: As I understood the evidence, and again I need to be corrected if I'm wrong, the discussions about P24, a number of witnesses said 'Yes, you can find a molecular weight 24 in other viruses but we have now been able to get the genome or we have now been able to sequence the B24 molecular is HIV and that is unique to HIV'.

MS MCDONALD: Yes. Going back to Dr Turner's analogy that he used at the beginning of the trial, your Honour will recall he talked of clinical observations of one who seems to have a broken arm but when you open it up there is no fracture. That is really akin to what we have here: you might have two molecular weights but when you open them up they are completely different.

HIS HONOUR: I assume that if one understands what

Dr Gordon is saying in this statement P85 you can actually go and view the sequences on a database.

MS MCDONALD: Yes, as I understand it from the evidence of one of the witnesses, and I can't remember who it is at the moment, but that you can log onto the Internet and look them up. I think the evidence went as far as establishing that the reason for that is so that scientists around the world can scrutinise these viruses.

I believe the evidence was also that it's a prerequisite to some studies that the authors publish their findings to leave them open to be scrutinised. As I understand it it's a very open process.

That Padian response that I was referring to earlier was P39.

Just as an aside on this issue of the genome of the virus: the evidence from Professor Higgins at the trial was in fact that the applicant's virus had been sequenced on three separate occasions. And there is a page reference to that in my written submissions. But it happened not once but on three separate occasions that the virus was sequenced, and that's what was compared against Ms Crispin's virus.

HIS HONOUR: I'm not sure how much that evidence helps me other than in the general sense that Professor Higgins confirms in his evidence, but not in the detail that I've heard it that there is a genetic sequence and it can be compared to other viruses, or it can be compared to other sources of the viruses.

MS MCDONALD: The other relevance is in this sense: presumably in terms of this fresh evidence what some aspects of it is going to is suggesting to a jury that we have proof that Mr Parenzee, as opposed to man X on the street has been properly diagnosed as being HIV positive, and the problems that will then flow from the prosecution case from that point of view, so in one sense it's all well and good to talk about theoretical people, but if this evidence is to have any legs it has

to be relevant to Mr Parenzee's circumstances. Those are of a man who has had the reactive result and the Western blot test.

HIS HONOUR: That all starts from the premise that there is a virus called HIV, that if it goes untreated it will develop into AIDS, and a person having it, their immune system will be depleted, they would have one of the recognised diseases and if they are not treated they will eventually die. I mean, that's where this all starts.

As I understand one of the positions - it's not the only position taken by the applicant in this matter - is that it hasn't been established that there is such a thing as an HIV virus. If it has been established then it's not been established that it causes AIDS. Then there is the other aspects of it about sexual transmission etc.

MS MCDONALD: Yes. In my submission, Mr Parenzee's circumstances are also relevant to the question of sexual transmission in that it's relevant for your Honour to take into account what the evidence was about the relatedness of his profile with that Ms Crispin's. I set out the reasons in my written submissions. She was a woman who not in any known risk group, she had not had a sexual relationship with anyone else, she was in a sexual relationship with the applicant for some time and lo and behold when she is diagnosed as HIV positive her genetic profile is the most closely related to her on the database in the facts of this case for the fact that it was sexually transmitted in this case.

My learned friend made some observations, maybe criticisms, of the respondent's written submissions and in particular of para.3.1.27 which appears at p.26. And he was there referring to the paragraph that reads:

'A knowledge and research into the genetic research of HIV ... and also address the problem of the genetic variability of the virus.'

The first criticism to be made is there is no such

vaccine yet. That is right. They are being developed. That is the point of the paragraph.

That reference to the variability of the virus arises from the evidence of Professor Gallo at 1248 of the transcript. And this was where Professor Gallo attempted to explain his views about what needed to be done to develop a vaccine. Your Honour will recall he talked about the virus attaching to the receptors on the molecules of the cell:

'This is the cell and my knuckles are the ... immune response will have to last.'

I'll stop there. That is what we were referring to in para.3.1.27 by the reference to the problem with genetic variability. It's a problem in creating a virus and meeting the challenge that the virus presents, not a problem about whether or not HIV exists; whether it has been isolated. It is a very specific problem to moving ahead with the treatment.

My learned friend also made an observation about para.3.1.30 and that is a paragraph that relates to endogenous retroviruses and made the point that there is only a footnote for the last paragraph. Just to make it clear: that footnotes relates to all of those sub-paragraphs. It is a footnote that goes with that para.3.1.30.

It's not as though we have made up those earlier statements and found some evidence of the last one. Those references cover the field, if you like, on that topic.

Just whilst referring to Professor Gallo in passing, over lunch I've endeavoured to go back and look at those early five articles, and I was of course reminded that your Honour we needed better quality of the copies because in part the beginnings and ends are obscured. Because of that, in my submission, there may well be an answer to some of the criticisms Mr Borick made, but I need to get those clearer copies because it relates to some footnotes of some things that are now obscured.

If there is anything extra that I need to put to your Honour in terms of the very specific submission made by my friend this morning, I can do that in writing in the next couple of days and provide that along with the fresh copies of the articles for your Honour. There was too much that was illegible to actually get to the bottom of it.

HIS HONOUR: Have you any objection to that Mr Borick?

MS MCDONALD: And if your Honour pleases, those are my submissions unless there is anything in particular I can assist your Honour with.

HIS HONOUR: So you really rely on your written submissions plus -

MS MCDONALD: Yes.

HIS HONOUR: Yes Mr Borick, is there anything you wish to put in reply?

MR BORICK: My friend referred to Mr Parenzee being sequenced on three separate occasions, on my understanding of the evidence from IMVS it was still only a part sequence, that is in the region of 12% of the whole sequence, and when you look at Dr Gordon's, and I think first of all you as judge, and we as lawyers, need to be careful about how we interpret this document, because there hasn't been a lot of evidence on it, but when he refers to:

'A number of human proteins had ... partial reasons of the gag'

He is saying the human proteins are clearly not the same as the viral proteins but there is some similarity and then he concludes from that, over the page 'this analysis indicates'. Now I don't think 'indicates' is sufficient for your Honour to place any reliance upon that report from Dr Gordon unless there is another area perhaps where both sides have heard what each has had to say about it. I might be able to give you further written assistance in the next few days because I would, personally, having heard what my friend has argued, would like to consider the position further and respond

with a little bit more science behind me than what I have got at the moment.

HIS HONOUR: I'm certainly not inviting this matter to keep going because it will never finish, but if we are trying to interpret a document produced by Professor Gordon, who is available, Ms McDonald?

MS MCDONALD: He is in Adelaide.

HIS HONOUR: Wouldn't we be better off to ask Professor Gordon what he means, rather than two lawyers at the bar table, with some assistance from whoever assists them, trying to interpret a document where we know who the author is. I mean under normal circumstances Professor Gordon would have been recalled to give the evidence, and everybody agreed to him responding in writing, but now we seem to have some, I wouldn't put it as high as issue necessarily, but some difference about how one might interpret what he said, perhaps it might be easier if he were to come and tell me and explain what he meant.

MS MCDONALD: That can be arranged -

HIS HONOUR: I'm in your hands, Ms McDonald, and Mr Borick, if you think I should go ahead and try and do my very best with this document, based upon the submissions, I will, but it's a document that's been prepared by a witness in the course of his evidence and if there is any real concern about what it actually means I wouldn't be averse to having him back to explain.

MR BORICK: Or alternatively he could let both of us know what he meant by it and I could get some further advice then and I could get back to you.

HIS HONOUR: If there can be an agreed position on what he is talking about, fine.

MR BORICK: Can we have a go at that first?

HIS HONOUR: Yes, I'm certainly content to do that, if there can be an agreed position about it, but in some respects it might be just as easy to get him back to tell us what he meant.

MS MCDONALD: That's my opinion. We haven't been able to agree on much so far and if my friend takes issue with the word 'indicates' in Professor Gordon's evidence, I don't think there is much prospect of coming to -

HIS HONOUR: On my understanding of scientists, it's very hard to get a scientist to tell you something is black or white, Their DNA evidence causes no end of difficulty for lay people to understand but they say that's the way they scientifically have to give it; they can't give a definitive response, they can't say 'DNA matches'. We would all like them to say that but they scientifically can't say it. So I don't know what 'indicates' means -

MR BORICK: I am happy if he comes back, just if I can get a couple of days advance notice of what he is going to say, just a bit of a statement from him and I can get advice.

HIS HONOUR: Well, Mr Borick, I think the easiest thing might be for him to come in and give his evidence about it and if you need time to get some advice about it I'll give it to you, because otherwise we are going to find that you didn't understand his explanation or something goes wrong, it might be just easier to get him in and ask him.

Ms McDonald, I saw Professor McDonald head out the door, was he going to check Professor Gordon's availability?

MS MCDONALD: Yes. In particular see if he is available tomorrow morning, to get it over and done with.

HIS HONOUR: If he was available tomorrow morning that would be very helpful. We have some time set for tomorrow.

MS MCDONALD: I can indicate for my friend's benefit on getting his advice, that what I put from the bar table is my understanding of what Professor Gordon is going to say. So perhaps he can deal with it preemptively in

that sense.

HIS HONOUR: I assumed you weren't talking off the top of your head.

MS MCDONALD: No, I'm not that clever.

HIS HONOUR: Mr Borick perhaps we might just see what the position is because I think that might be easiest. And you'll have the transcript of what Ms McDonald put to me, so insofar as that is of assistance to you you'll be able to refer that back to your advisers and if you need a bit more time after he has given his evidence I'll certainly give it to you.

MR BORICK: Thank you. The hearing, then, tomorrow morning will be confined to P85.

HIS HONOUR: Yes, absolutely. I don't want to open the whole subject up again.

MR BORICK: The balance of my response. My friend referred to the misunderstanding of the causation issue involved and I have difficulty with sort of sorting out what is the causation issue involved. I can give a couple of examples which I think comes to what I'm saying about this.

That you can have causation in the case of cause death by dangerous driving and the issue is whether death was caused by the dangerous driving, but as your Honour is well aware, there are lots of other factors can come into play and it's those other factors which determine the result. And similarly if you have causation in a homicide case, let's say the cause of death is said to be drowning but then drowning can arise from other factors, such as, for example, an anaphylactic fit, or something of that nature. So you look to see those other factors.

So it's in that light that I'm referring to causation in this case and the causation question is, as I put it in my final question - almost final question to Professor McDonald 'Do you agree there must exist a reasonable doubt that HIV, even of itself, will cause a life-threatening disease'. That expression I

deliberately used.

MS MCDONALD: As I understand it, Professor Gordon's staff are getting him out of his clinic at the moment to speak to him about his availability tomorrow, but a cursory look at his diary looks like it should be okay. But that's his staff speaking on his behalf at the moment.

HIS HONOUR: Why don't we adjourn for a few minutes so that we can get a definitive answer because otherwise problems are going to arise, if his staff are not aware of something he is going to be up to then there will be a whole raft of telephone calls in an attempt to find a time. So I would hope that if I were to adjourn for 15 minutes you should be able to give me a response.

MS MCDONALD: That should be plenty of time.

HIS HONOUR: Is that convenient Mr Borick?

MR BORICK: Yes, your Honour.

HIS HONOUR: I will adjourn for 15 minutes, then we will come back and if we could hear his evidence tomorrow at 10 a.m., that would be a good thing and then we can finalise the matter.

ADJOURNED 2.59 P.M.

RESUMING 3.17 P.M.

HIS HONOUR: Yes, Ms McDonald.

MS MCDONALD: Professor Gordon will be here at 10 o'clock tomorrow.

HIS HONOUR: We will adjourn the matter -

MR BORICK: I have some clean copies of the Gallo papers that I could lend to my friend overnight so that we can perhaps complete that part of it as well.

HIS HONOUR: Yes. Thank you, Mr Borick. 10 o'clock tomorrow. Ms McDonald, you might be able to make an oral submission rather than a written one.

MS MCDONALD: Yes, I will, now that I have these tonight.

ADJOURNED 3.19 P.M. TO THURSDAY, 1 MARCH 2007 AT 10 A.M.