Tuesday, 4 July 2023

[Open session]

[The accused appeared via videolink]

--- Upon commencing at 9.30 a.m.

PRESIDING JUDGE VELDT-FOGLIA: Good morning and welcome.

Court Officer, can you please call the case.

THE COURT OFFICER: This is file number KSC-BC-2020-04, The Specialist Prosecutor versus Pjeter Shala.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

Firstly I kindly ask you to indicate who is present today in court.

Mr. Prosecutor, you have the floor.

MR. DE MINICIS: Good morning. For the Prosecution, Line Pedersen, Gaia Pergolo and Filippo De Minicis. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

Victims' Counsel, please.

MR. LAWS: Good morning, Your Honours. I'm Simon Laws, counsel for the victims in this case.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

Defence Counsel.

MR. GILISSEN: Thank you very much, Your Honour. Good morning. We are here with Mr. Shala and Jean-Louis Gilissen, the lead counsel. The two co-counsel, Ms. Cariolou and Mr. Aouini are there. Ms. Kolbe is with us as review -- I always forget this name, review assistant. And we have Ms. Petravica, our case manager. Thank you very much.

PRESIDING JUDGE VELDT-FOGLIA: Thank you. All noted.

Mr. Shala, can you confirm that can you hear me well. Mr. Shala, I cannot hear --

THE ACCUSED: [via videolink] [Interpretation] I hear you very well. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

Today we will continue with the testimony of Mr. William Goodwin. He is an expert called by the Specialist Prosecutor's Office.

Before we start with the witness's testimony, there are two oral orders we would like to issue, short oral orders.

One relates to a public redacted version that should still come in pursuant to our decision, which is filing 538, on the decision on the Prosecution motion for judicial notice of facts of common knowledge and adjudicated facts. We ordered the Defence to file by last Friday the public redacted version of Annex 2 to the Defence response to the Prosecution motion, which is filing 507. We have not received anything up till now. And we direct the Defence to issue -- or to file by next Friday, 7 July, that is, a public redacted version of Annex 2 of filing 507 and including the redactions already applied by the SPO.

That concludes the Panel's first oral order.

And we have a second oral order, and that pertains to a request made by the Defence yesterday, Monday, 3 July, at 17 minutes past 7.00, and it concerns two items, to add two items to its list of

material to be used during cross-examination with the witness of today.

The documents bear the following ERN number. I will say them slowly. DPS00237 till DPS00258, and the other document, DPS00259 till DPS00269 respectively. They were disclosed yesterday in disclosure package 139.

The Defence submits that it made this request following a consultation with the forensic expert. We note that no objections were raised by the SPO and by Victims' Counsel. And we authorise, therefore, to add these items in the list of items to be used during cross-examination of Witness W04875.

And this concludes also our second oral order.

And if there is nothing else to raise or to discuss with the Panel, we can now proceed with the testimony of the expert witness.

Mr. Goodwin will testify without in-court protective measures. We might go, like we have done with the other witnesses, in some occasions to private sessions if there is a need to protect the identity of other witnesses and victims at risk on account of their cooperation with the Specialist Chambers.

For today, we have organised three sessions of one and a half hour, and I don't foresee to make any changes in the order of the day, but let us see how the day proceeds.

Very well. Madam Court Clerk, could you please usher the witness in.

[Trial Panel and Court Officer confer]

[The witness entered court]

PRESIDING JUDGE VELDT-FOGLIA: Mr. Goodwin, good morning.

THE WITNESS: Good morning.

PRESIDING JUDGE VELDT-FOGLIA: And welcome to the Specialist Chambers.

THE WITNESS: Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Mr. Shala, can you hear the witness?

THE ACCUSED: [via videolink] [Interpretation] Yes, I do.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

Mr. Goodwin, how are you today?

THE WITNESS: I'm very good. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Very well. Mr. Goodwin, we will start today with your testimony, and before we begin, I have several remarks.

THE WITNESS: Okay.

PRESIDING JUDGE VELDT-FOGLIA: You are called to testify before the Specialist Chambers in the case of The Specialist Prosecutor versus Pjeter Shala to assist the Panel to reach a verdict. We will first ask you to take your solemn declaration, and after that, you will be asked questioned by the counsels for the Specialist Prosecutor's Office, Victims' Counsel, and the counsel for the Defence, and we might have a second round. And at the end, maybe there are questions from the Judges.

THE WITNESS: No problem. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Very well. I would like to provide you with some guidance for answering the questions that will be put to you.

Mr. Goodwin, please, listen carefully to each question and if you don't understand, feel free to ask that the question will be posed to you again or clarified or repeated. We want you to give your expertise to the best of your knowledge and to state what your findings and opinions are.

Please answer the questions put to you. If we need further clarification, we will ask and proceed doing so.

There's also some practical advice I would like to share with you, and that is that everything that we say here is translated and recorded. And it is therefore important to speak into the microphone, to speak at a slow pace, and to speak clearly.

What is also very important, that you should only start speaking when the person asking you a question has finished. We should not have overlapping speakers. So it can be helpful to count till five in order to be sure that everything has been translated and transcribed. Yes?

If I raise my hand, I ask you to stop talking. Because if I would ask you to stop talking, we would have overlapping speakers. So that's the reason that I raise my hand in order to ask you to -- not to continue.

It could be that I will ask you to leave the courtroom if there is a need to discuss something with regard to the question that is

posed to you in order to avoid to influence you.

If you have any questions, if you need a break or there's something else you would like to share with the Panel, please raise your hand and I will give you the floor.

Understood all this?

THE WITNESS: Yes, thank you.

PRESIDING JUDGE VELDT-FOGLIA: I see you nodding. Very well.

I will ask you now to take your solemn declaration. Madam Court Usher will assist you. And in the meantime, I remind you it is an offence within the jurisdiction of the Specialist Chambers to give a false testimony. Do you understand that?

THE WITNESS: I do, yes.

PRESIDING JUDGE VELDT-FOGLIA: Very well. Please you may read it out.

THE WITNESS: Conscious of the significance of my testimony and my legal responsibility, I solemnly declare that I will perform my expert analysis conscientiously and to the best of my knowledge, and that I will state my findings and opinions accurately and completely.

PRESIDING JUDGE VELDT-FOGLIA: Thank you, Mr. Goodwin. You are now under oath.

We can begin with your testimony, starting with the questioning by the Specialist Prosecutor's Office.

I noted the time you estimated that you will be using, so you have the floor.

MR. DE MINICIS: Thank you, Your Honours.

WITNESS: WILLIAM GOODWIN

Examination by Mr. De Minicis:

Q. Good morning, professor.

A. Good morning.

Q. Professor, could you please state your name and surname for the record.

A. My name is William Goodwin.

Q. And your date and place of birth?

A. My date of birth is 21 May 1969. And the place of birth is Stoke on Trent, UK.

Q. You have provided us with your CV which lists in detail your studies, professional memberships, past and present occupations as well as your publications. I will not ask you to repeat them all here as we intend to tender your CV in evidence. But I will just ask you some questions or some of the information recorded in it to allow us to laymen to better understand, for example, the field of your expertise.

Professor, I understand that you are currently teaching in the United Kingdom at the University of Central Lancashire; is that correct?

A. That is correct, yes.

MR. DE MINICIS: Your Honours, could we please have the CV of the expert on the screen. That would be ERN 103392-103400 RED.

PRESIDING JUDGE VELDT-FOGLIA: Please proceed, Mr. Court Officer.

MR. DE MINICIS: Thank you. If we could zoom in just a little, please.

Q. Professor, I see that under Current Post it reads: Reader in Forensic Genetics, Course Leader for MSc in Forensic DNA Profiling and MSc Forensic Science at the School of Natural Science of the university of Lancashire.

Could you explain in a few words what the science of forensic genetics is concerned with.

A. So I would describe myself as a forensic geneticist. And so that is really the application of molecular biology to forensic problems, typically either identification of evidence left at a crime scene and matching that to a suspect or my specialty is using it for establishing relationships in both living persons and deceased persons.

Q. In fact, that kind of answers what my next question was which is whether in your career you have worked in the identification of the paternity and lineage testing.

A. Yes. In my previous position, which was at the University of Glasgow, I established a relationship testing laboratory within the department of forensic science and medicine, or forensic medicine and science, I should say. And so that involved case work both from members of the public, the police forces, and also agencies involved with disaster victim identification.

Q. Professor, you have been asked by my office to look at two DNA identification reports prepared by a Czech laboratory. The first

time we retained your expertise was in 2021 and we did so again in 2023.

Do you have experience, are you familiar with the specific testing methods used by the Czech laboratory in these two reports that we had asked you to look at?

A. Yes. The methodology used in the two reports is quite standard methodology used in forensic genetics, and I'm familiar with the methods that they used in general.

Q. Professor, we -- I am not going to ask you to repeat the information that is already contained in your reports. I will just start by asking you to authenticate them, and then I will ask you some follow-up questions for the benefit of our understanding.

MR. DE MINICIS: Your Honours, I would like to have the first report prepared by Professor Goodwin on the screen for reasons of authentication and --

PRESIDING JUDGE VELDT-FOGLIA: Please proceed, Court Officer.

MR. DE MINICIS: The ERN would be 103373-103387 RED.

PRESIDING JUDGE VELDT-FOGLIA: Mr. Prosecutor, I think it's helpful if we would talk -- would adjust our pace a little bit.

MR. DE MINICIS: Yes, okay. Will do.

Q. Now, sir, this is the report that you prepared for us on 30th of -- well, in July 2021. This was the date of the letter of instructions. This report contains your opinion on a number of different DNA identifications. Now, only one of them is relevant for this specific case, so the other information has been redacted. It

concerns victims which are not concerned with this case.

MR. DE MINICIS: But if I could ask the Court Officer to move to page 15 of this report.

Q. Professor, we see your name there. And is that your signature on top of your name and date there?

A. That is my signature, yes.

PRESIDING JUDGE VELDT-FOGLIA: Sorry. We need to wait at least five seconds between the answers and the questions because we are here speaking in English among ourselves, but we need translation for Mr. Shala. And I understand that it is -- we have to adapt ourselves to that.

MR. DE MINICIS: I will keep that in mind, Your Honour. The first time we do this with a witness in the same language.

Q. Professor, did you prepare this report yourself?

A. I did.

Q. Thank you. Now, I would like to move on to the next report that you prepared for the SPO in 2023. It's a shorter report and it only concerns a specific case in this, that is concerned with this trial.

MR. DE MINICIS: And could I please have ERN 111160-111162 on the screen.

PRESIDING JUDGE VELDT-FOGLIA: Please proceed.

MR. DE MINICIS:

Q. Now, professor, as you can see on the first page of this report, next to "Victim" there is a name that we are not going to say in public session. I will be referring to that person, if necessary,

throughout our examination, as subject C, and I please ask you to do the same.

A. Mm-hm.

Q. Now, in this report, you were asked to provide your views on an updated report prepared by the Czech institute, which is for the record, ERN 110670-110674, which contained new calculations of the DNA profiles that were extracted from samples provided to the Czech lab in 2009.

Professor, did you personally prepare this report?

A. I did.

Q. I have a small number of follow-up questions --

PRESIDING JUDGE VELDT-FOGLIA: Mr. Prosecutor, just one correction for the record. I see in line 10 -- page 10, line 8, that the report is dated 2003, but it must be 2023 if I'm not mistaken.

MR. DE MINICIS: Yes, it is indeed dated 2023, Your Honour.

PRESIDING JUDGE VELDT-FOGLIA: Yes. Okay. So that is now on record. Thank you. Please proceed.

MR. DE MINICIS: Thank you.

Q. Now, if we could move to page 2 of the report. Page 2 of the report, you stated that the analysis of the Y chromosome adds weight to the hypothesis that subject A - subject A would be the first of the two names in the first full paragraph that you see there - is the biological father of the person from whom the bone sample was taken, or at least related through paternal lineage. However, because the Y chromosome data was not provided in the report, it was difficult to

estimate that magnitude of that support.

Now, my first question is: On 27 June 2023, I provided you with the data used for the Y chromosome analysis. Did you have an opportunity to review that data?

A. I did.

Q. Upon review of this data, is it still your view that the Y chromosome analysis adds weight to the hypothesis that subject A is the biological father of the person from whom the bone sample was taken?

A. It is.

Q. Based on the data of the Y chromosome calculation, are you able to provide any estimate of the magnitude of the support that the matching of the Y chromosome provides to the findings in the updated report?

A. I have carried out some analysis to gauge the strength of that match.

Q. In the updated report, the Czech institute provided a likelihood ratio, which I understand is based on a -- not the Y chromosome calculation but on a different type of calculation. And this likelihood ratio makes a biological relation approximately 11 million times more likely than not. Is that correct?

A. That is correct, yes.

Q. Is there a standardised way to combine the likelihood ratio stated in that report with the results of the Y chromosome calculation?

A. It is accepted that the Y chromosome behaves differently to the other chromosomes and so the results can be combined, and we can add weight to that original likelihood ratio. How that is done, there is a large degree of variation within the forensic community because of the desire to be conservative in the presentation of evidence. With the caveat that with Y chromosome it is not just looking at father/son relationship but would match other relatives on the paternal lineage. So siblings, cousin -- paternal cousins, et cetera.

So the -- there is a way to estimate the frequency of the Y chromosome presented by the Czech laboratory. The generally accepted method for the forensic community or at least a generally accepted method for the forensic community is to use a database called YHRD, which is the Y human reference database, and this is a collation of different studies which detail the frequency of Y chromosomes in different populations.

Q. Let's take a conservative approach. And would it be possible for you to provide us with -- if we were to combine the likelihood ratio as stated in the Czech report --

A. Mm-hm.

Q. -- with the Y chromosome calculations, based on a conservative approach, how would that likelihood ratio be affected numerically?

A. So I when I searched the YHRD, I used a southern -- a south-western population as my target. So that looked at Y chromosomes in south-western Europe, which includes the Balkans and

to southern Italy, and the match frequency was approximately 1 in 280, approximately. I'm rounding down to be a little bit conservative. We can apply corrections to that, statistical corrections to using sort of established methodology for estimating frequencies, and what we usually do is take the most conservative end of that. That brings us down to a match of around 1 in 180 individuals.

So how that would be combined would depend on policies of individual laboratories. Some may arbitrarily just say, okay, we don't want to overestimate it, so we will -- I would suggest a very conservative approach would be to use a ten-fold increase. That would be very conservative based on the frequency of that haplotype in the population. So that would increase it to 1 in around 110 million rather than 11 million.

If we're combining based on the frequency of the occurrence, then, again, quite a conservative approach would be around a 100-fold increase which would take us to a likelihood ratio in the region of 1 in a billion.

MR. AOUINI: Excuse me, Your Honour. I think we have a discrepancy with the numbers, the matching ratios. We have one in 2831 and 2830, and then 1 in 180. And I believe I heard something different. I believe I heard 1 in 280. Maybe we can clarify this number.

PRESIDING JUDGE VELDT-FOGLIA: Thank you, Defence Counsel. I had noted them here for myself.

Mr. Prosecutor, could we go through the number 2830 and 180, just to see if that was the number ...

MR. DE MINICIS:

Q. Sometimes we have a -- just the transcript here, at line 12, page 13, state that the match frequency was 1 in 2830, but perhaps that's not the number you stated.

A. The match, the raw match -- when we look at the database, with this Y chromosome profile we get a match in 1 in 280 -- I believe the numbers are 283 individuals. It's the raw match profile.

When apply statistical corrections to that to be -- and take the most conservative interpretation, it comes down to around approximately 1 in 180 matches. 1 in 180 individuals.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

MR. DE MINICIS:

Q. Thank you, professor. So you told us how by combining the two likelihood ratios of the two type of analysis we can have a very conservative approach which give us a likelihood ratio which is ten times the one stated in the report. You could use less conservative approach which would increase that 100 times.

Within the scientific community are there any guide-lines that we could consider generally accepted that could help us understand the strength of these numbers with regard to the possibility of an identification? In other words, are there words that are applicable these numbers that you can help us with?

A. Yes. There are verbal qualifiers of likelihood ratios which are

designed to try and facilitate the understanding of the numbers. There is an organisation called ENFSI, which is the European Network of Forensic Science Institutes, and that provides a guidance of how to turn a likelihood ratio into a verbal qualification.

Q. Now, starting from the likelihood ratio stated in the Czech report, without combining that with the likelihood ratio of the Y chromosome calculation, how would that be characterised according to these guidelines?

A. I believe the classification for a million and over is extremely strong evidence in support of that proposition over the alternative proposition.

Q. Thank you, professor.

A. The guideline stops at 1 million. It doesn't go over 1 million.

Q. Thank you.

MR. DE MINICIS: Your Honours, I have no further questions for this witness.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

THE WITNESS: Can I just clarify just for the record. The counsel had been very generous in promoting me to professor, whereas, in fact, my actual title is reader. So just for the record.

PRESIDING JUDGE VELDT-FOGLIA: Thank you. We noted that.

The examination by Specialist Prosecutor's Office for now has been finalised. We will continue with the Victims' Counsel, and I will now see if he has any questions to put to you.

MR. LAWS: Your Honour, we have no questions. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

Then I will give the floor to the Defence Counsel.

Mr. Goodwin, it's the Defence Counsel will now be posing questions to you.

Cross-examination by Ms. Cariolou:

Q. [Microphone not activated]

A. Good morning.

Q. Good morning, sir, for the record. I'm Leto Cariolou, and I will be putting some questions to you regarding the DNA reports presented in this case on behalf of Mr. Shala who is the accused.

So let's start with the -- in the 2009 report that you have reviewed, specifically on page 3.

MS. CARIOLOU: That is on ERN page SITF00012455.

PRESIDING JUDGE VELDT-FOGLIA: Please proceed, Mr. Court Officer.

MS. CARIOLOU: If we could have page 3 of the report. Right. Thank you.

Q. We see the bone fragment was "in very bad condition," but it was highly probable, and I quote, that the remains went through the procedure of saponification, and that repeated DNA extractions were performed which yielded partial DNA profiles.

In these circumstances, Mr. Goodwin, is it fair to understand that the DNA quantities extracted from the bone fragment were small, or even perhaps very small, and that the DNA profile was degraded?

A. Yes, it is. Based on what is written here, it would be a

reasonable assumption that the DNA was either highly degraded or -- and in low amounts.

Q. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: May I ask to wait some seconds before replying to the question of Defence Counsel. That will assist our interpreters. Thank you.

THE WITNESS: Thank you.

MS. CARIOLOU: Thank you, Your Honours.

Q. Can we please confirm whether small quantities of DNA and DNA degradation can lead to failure to observe some alleles that are in fact present in the DNA profile in question?

A. Yes, this is possible. We can either have loss of whole DNA markers or partial loss of markers.

Q. And I'll wait for -- for the translation.

Can you please explain to the Judges that allele dropout as used in forensic genetics, briefly.

A. Allele dropout is where we should see an allele but we don't because either of degradation or there not being enough DNA to carry out the analysis successfully.

Q. Thank you. And perhaps you have already answered my next question which is can you please explain when allele dropout is observed.

A. Typically when we have either highly degraded DNA or low quantities of DNA.

Q. And I will wait for the translation.

PRESIDING JUDGE VELDT-FOGLIA: Thank you very much.

MS. CARIOLOU:

Q. Can you comment on the occurrence of partial profiles in allelic dropout when it comes to the identification of specifically skeletal remains? If you could comment on the occurrence.

A. It can occur and it does occur, but on a case-by-case basis we have to review that.

Q. Would you agree with me that it is a fairly common phenomenon with skeletal remains?

A. I would say it is very context specific. With some skeletal remains we get very nice profiles; with others, it does occur.

Q. Can you confirm that this phenomena we talked about, allele dropout, and even locus dropout, may lead to an inaccurate representation of the real DNA profile?

A. Yeah, we may be missing alleles from the profile.

Q. Now, if we could go to the 2023 report that I believe you have reviewed for the purposes of your own report, and if we could turn to ERN page 11672.

MS. CARIOLOU: I'll just -- yeah, this is page --

PRESIDING JUDGE VELDT-FOGLIA: Please proceed, Mr. Court Officer.

MS. CARIOLOU: Yes.

Q. A table is provided for parentage statistics.

PRESIDING JUDGE VELDT-FOGLIA: Wait a moment until the table is there.

MS. CARIOLOU: Is it possible to have -- sorry, I'm looking for ERN page 110672. It's the table of reverse parentage statistics which was an annex, I believe, in the 2023 report.

MR. DE MINICIS: If I may of assistance. The full ERN range starts at 110670.

MS. CARIOLOU: Thank you. Thank you.

Q. So if we could focus on locus D19S433, which is the second one in the list presented, we see that it is reported as having one allele, allele 14. Now, on the basis of the information available in the report, can you exclude that, for instance, the DNA profile related to the bone fragment has alleles, for instance, 10 and 14 with allele 10 dropping out? Is this possible?

A. It's possible, but the scenario you present is unlikely because with the smaller allele, it is less likely to drop out than a larger allele. But it -- I cannot say it is impossible.

Q. Is it correct that allele dropout is generally observed with lower allele peak heights?

A. The peak height on a DNA profile is when it drops below a certain threshold. That would be when it drops out, when we cannot see it any longer.

Q. Is it correct that allele detection thresholds expressed in RFUs, in relative fluorescence units, are set to define the height of peaks on an electropherogram below which allele dropout is considered to be possible?

A. Yes, I would expect laboratories, when they're interpreting the

electropherograms, to have a specified threshold for -- of, like you say, relative fluorescence units, which determines the point at which they call or don't call an allele.

I would also expect, though, that there be -- in complex profiles, there'd be some expert interpretation of that data because obviously as the expert is interpreting it, you are aware that dropout may or may not be happening.

PRESIDING JUDGE VELDT-FOGLIA: Defence Counsel, for the record, because I don't see your question reflected completely in the transcript, I think it would be of assistance that you would read out the question again in order to have the whole question on record and to assist our stenographer.

MS. CARIOLOU: Certainly, Your Honours. And apologies to the stenographer.

Is it correct, the question was, that allele detection thresholds in RFUs, in relative fluorescence units, are set to define the height of peaks on an electropherogram below which allele dropout is considered to be possible.

PRESIDING JUDGE VELDT-FOGLIA: My suggestion would be that with these type of questions, we really have to adjust our pace in order to be able to have an accurate transcript. Because it is different kind of exchange of information than we normally have.

Please proceed.

MS. CARIOLOU: Thank you.

Q. Is it possible, Mr. Goodwin, that someone could interpret a peak

which is below the allele detection threshold as a real peak and call it an allele despite the fact that it is below the allele detection threshold?

MS. CARIOLOU: And maybe we can give a few minutes to the stenographer.

PRESIDING JUDGE VELDT-FOGLIA: You are there. Yes.

THE WITNESS: The interpretation would depend very much on the individual laboratory's own operating procedure for carrying out this type of analysis. So normally, and this is generalisation, there is a -- with complicated profiles, for example, in a degraded profile, where you can use your expert opinion along with the standard operating procedure to help to you interpret the profile.

MS. CARIOLOU:

Q. To your knowledge, what was the allele detection threshold used for the purposes of the 2009 and 2023 reports?

A. I do not have any knowledge of processes used by the Czech laboratory for the interpretation. I have been only asked to look at the evaluation data.

Q. Do you agree with me that different DNA typing kits may have different allele detection thresholds?

PRESIDING JUDGE VELDT-FOGLIA: [Microphone not activated].

MS. CARIOLOU: Typing kits.

PRESIDING JUDGE VELDT-FOGLIA: [Microphone not activated].

MS. CARIOLOU: STR -- DNA STR typing kits.

PRESIDING JUDGE VELDT-FOGLIA: Yes. So, again -- no. Now the

question is right. "Do you agree with me that different DNA type" --

MS. CARIOLOU: Typing kits.

PRESIDING JUDGE VELDT-FOGLIA: Typing kits. Very well.

THE WITNESS: The -- yes, different kits have different sensitivities, although most are in a similar sort of order of magnitude. It also depends on where the individual DNA markers are within the profile, because in different kits they are positioned in different places. So in some kits, a small loci may be a large loci in another kit, and so that may affect the thresholds, or the sensitivity, I should say.

MS. CARIOLOU:

Q. Thank you. Just going back a little bit. Just to illustrate for the purposes of the case allele dropout and its potential, if we could have a look again at the table we have on our screens on parentage statistics. If the genotype at locus D19S433 concerning the bone fragment is, for instance, 10 and 14, was -- as we can see of the alleged mother as reported is 14 and 16, and that of the alleged father as reported is 13 and 14, could you please tell us whether parentage would be excluded or confirmed in this scenario?

A. In this scenario, we would have an inconsistency. It would not exclude in its own right paternity because with these markers, they have a relatively high mutation rate. And so there are two explanations, either it is a true exclusion or the marker has mutated between the transmission from parent to child.

Q. Thank you. And if we could repeat the exercise for a different

locus. If we take locus -- the genotype at locus D8S1179 concerning the bone fragment. If we -- if the locus -- if a genotype at this locus is 14 and, for instance, 18, was -- we see that of the alleged mother as reported is 14 and 15, and that of the alleged father is 11 and 14, in this case, would parentage be excluded or confirmed?

A. Again, it would present an inconsistency which would have to be incorporated into the calculations. And if we accumulate inconsistencies, then the likelihood ratio becomes very low.

Q. And finally, let's take the last locus, FGA. If we assume there that the genotype related to the bone fragment is 20 and 30, and that of the alleged mother as reported is 20, 22, whereas that of the alleged father is 20, 26, can you please tell us whether in this scenario parentage would be excluded or confirmed?

A. Yes, as with the previous answers, it would present an inconsistency and that would have to be incorporated into the calculation.

Q. Thank you. But do you agree with me that assuming the alleles not present in the profiles of the mother and father as mentioned, kinship analysis in this case would lead to an exclusion of parentage?

A. Without doing the calculation, I would say it would be very likely.

Q. Is it possible in the three loci that we discussed that we could have heterozygote loci which were incorrectly interpreted as homozygote?

PRESIDING JUDGE VELDT-FOGLIA: Before answering, could you repeat the question --

MS. CARIOLOU: Of course.

PRESIDING JUDGE VELDT-FOGLIA: -- because we lost one important word.

MS. CARIOLOU:

Q. I was just asking if it is possible with regard to the three loci that we discussed, that we could have heterozygote loci which were incorrectly interpreted as homozygote?

PRESIDING JUDGE VELDT-FOGLIA: Very well. Thank you.

JUDGE MIKULA: Please, there is something wrong in the transcript. The question was "that we could have heterozygote loci which were incorrectly interpreted as homozygote." We missed the "loci" word. 14, line 14.

PRESIDING JUDGE VELDT-FOGLIA: Defence Counsel, the question as is now reflected in line 14 till 16, that -- does that reflect your question accurately?

MS. CARIOLOU: Yes, with the exception that we could add, as rightly pointed out by Your Honours, that we could have heterozygote loci which were incorrectly interpreted as homozygote. And of course, the witness is in a much better position to explain.

PRESIDING JUDGE VELDT-FOGLIA: Of course. It's just that we want to reflect your question accurately. Thank you.

Please. Please proceed, Defence Counsel.

MS. CARIOLOU:

Q. If we could have the answer by the witness.
A. Based on what is front of us here, it is a possibility. I mean, I would add the caveat that I would expect a laboratory experienced in interpreting electropherograms to be cognisant of this and to be wary of it.
Q. Isn't it right to say that normally particularly when analysing --
PRESIDING JUDGE VELDT-FOGLIA: You really have to wait between question and answer [Microphone not activated].
THE INTERPRETER: Microphone. Microphone for Your Honour, please.
PRESIDING JUDGE VELDT-FOGLIA: We really have to slow down between the questions and the answers. If not, we cannot have an accurate transcript.
And apologies.
MS. CARIOLOU:
Q. Isn't it fair to say that normally when analysing bone fragments, you would expect to see an entry for both alleles even when we are referring to homozygote loci?
A. No.
Q. Okay.
PRESIDING JUDGE VELDT-FOGLIA: Please proceed.
THE WITNESS: This software, I believe, this is in the CODIS software which is a US software, and the normal practice in the US is to just -- when you have a homozygous loci is to only include one

allele. In Europe or the rest of the world, we tend to use two -- we repeat the allele, but in the US system, they tend to have just one entry.

MS. CARIOLOU:

Q. Mr. Goodwin, how can we assess whether the electropherograms have been interpreted and transcribed correctly?

A. You would have to be -- you would have to review them.

Q. Let's -- thank you. Let's now move to a slightly different topic.

You are, of course, familiar with the article published by Prinz and others in 2007 on the recommendations regarding the role of forensic genetics for disaster victim identification by the DNA Commission of the International Society For Forensic Genetics. We disclosed this --

PRESIDING JUDGE VELDT-FOGLIA: I think it would be of assistance to --

MS. CARIOLOU: To repeat.

PRESIDING JUDGE VELDT-FOGLIA: -- repeat again the title of the article.

MS. CARIOLOU:

Q. So we're talking about the article published by Prinz and others in 2007 on the recommendations regarding the role of forensic genetics for diaster victim identification by the DNA Commission of the International Society for Forensic Genetics. And ...

PRESIDING JUDGE VELDT-FOGLIA: Yes.

MS. CARIOLOU: We've disclosed it yesterday and it has received ERN numbers DPS00259 until, I believe, 1 -- I believe 12PS00269 [sic]. 12PS00269.

PRESIDING JUDGE VELDT-FOGLIA: Could you repeat the first number. I see DPS.

MS. CARIOLOU: DPS00259 until DPS00269.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

MS. CARIOLOU:

Q. Now, on page 9 of this paper it is stated, and I read that:

"It is not necessary to have all amplification attempts in the central database if a properly reviewed consensus profile is present and previous data is available for review."

[Trial Panel and Court Officer confer]

PRESIDING JUDGE VELDT-FOGLIA: I suggest that we bring on the screen the article you are citing and that we go to the specific page and excerpt you are reading out. That would assist the interpreters to translate the specific excerpt directly from the paper, in addition to you reading it out.

MS. CARIOLOU: Certainly, Your Honours. So if we could turn to page 9 -- I believe we are looking at page 10 right now. If we look at page 9, towards the middle of the page in section 5, the last sentence of section 5, and perhaps we could zoom in a little bit.

Q. So the last sentence on section 5, it is stated that:

"It is not necessary to have all amplification attempts in the central database if a properly reviewed consensus profile is present

and previous data is available for review."

PRESIDING JUDGE VELDT-FOGLIA: Please proceed.

MS. CARIOLOU:

Q. Mr. Goodwin, could you please explain to the Panel what is considered a consensus profile.

A. A consensus profile is where the DNA profiling process is repeated, either with the same methodology or slightly different methodology to -- and in both cases, we get a partial profile. We can combine those into a consensus profile as long as we have sufficient overlapping information.

PRESIDING JUDGE VELDT-FOGLIA: And I read out, because I see that a word is lacking:

"A consensus profile is where the DNA profiling process is repeated either with the same methodology or slightly different methodology to," and then a word is lacking, "and in both cases we get a partial profile."

And then you continue.

Do you know what word is lacking there?

THE WITNESS: Sorry, could you read it again.

PRESIDING JUDGE VELDT-FOGLIA: You could also look at it in front of you. Then you go to page 27, line -- it starts at line 9 and the word "lacking" is in line 11.

THE WITNESS: I think it's just to say to profile the DNA.

PRESIDING JUDGE VELDT-FOGLIA: [Microphone not activated].

Please proceed.

MS. CARIOLOU:

Q. Is it fair to say that logically, and as a matter of good practice, you would expect to see reference in the methodology of a report to all DNA STR typing kits that were used for the purposes of their analysis?

A. This would normally be present but obviously it depends on the requirements of each legal system.

Q. Now, if we go back to the recommendations of the DNA Commission of the International Society for Forensic Genetics, it's the article that we have on our screens, on page 9, it is the sentence that we read, where it is stated that -- I'm just repeating the same sentence, "that not all amplification attempts must be presented if we have a properly reviewed consensus profile and previous data is available for review."

To your knowledge --

PRESIDING JUDGE VELDT-FOGLIA: [Microphone not activated].

MS. CARIOLOU: Yes, of course.

PRESIDING JUDGE VELDT-FOGLIA: Please proceed.

MS. CARIOLOU:

Q. To your knowledge, was the profile presented in the 2023 report properly reviewed?

A. I have no knowledge of the review process.

Q. Did you have the opportunity to review the electropherograms or the DNA profiles generated in 2009?

A. I was not asked to do this.

Q. Can you confirm whether the alleles from the electropherograms have been interpreted and transcribed correctly in the 2023 report?

A. I have not seen electropherograms so I cannot comment on that.

Q. If we can go back to the recommendations --

PRESIDING JUDGE VELDT-FOGLIA: Defence Counsel, just to go back to your question on page 28, line 24 and 25:

"Can you confirm whether the alleles from the electropherograms have been interrupted" --

MS. CARIOLOU: Interpreted.

PRESIDING JUDGE VELDT-FOGLIA: Interpreted.

MS. CARIOLOU: Interpreted. Thank you, Your Honours. And transcribed correctly.

PRESIDING JUDGE VELDT-FOGLIA: In the 2023 report. That's now noted.

Please proceed, Defence Counsel.

MS. CARIOLOU: If we could go back to the recommendations and if we could have on our screen page 10. And if we could go to recommendation 12 which is at the bottom of the page.

Q. We see that it is stated here:

"The preparedness plan of the laboratory needs to include policies for family notification, long-term sample disposition and data archiving."

Do you agree that data archiving is essential in forensic genetics particularly where an analysis is requested by a judicial order?

A. Yes. There is would certainly be an expectation that the laboratory would keep or transfer the data in a contractual agreement with the instructing authority.

Q. Can we now turn to one of your own --

PRESIDING JUDGE VELDT-FOGLIA: No, wait.

MS. CARIOLOU: Oh, sorry.

PRESIDING JUDGE VELDT-FOGLIA: We have to -- I see that are you doing a real effort, Defence Counsel. I know that you're doing your utmost. I think we can --

MS. CARIOLOU: Just a correction perhaps to the transcript. Apologies. Line 19, I believe Mr. Goodwin has said: "Yes, there would be an expectation," not exception.

Q. Please correct me if I'm wrong.

A. Yes, you are correct.

PRESIDING JUDGE VELDT-FOGLIA: No, no, wait, please.

Okay. You may proceed.

MS. CARIOLOU:

Q. Can we now turn to one of your recent publications that you have co-authored entitled: "The search process: Integrating the investigation and identification of missing and unidentified persons," which was published in 2021. It's one of the articles that we disclosed yesterday and I believe the ERN numbers are DPS00237 until DPS00258.

PRESIDING JUDGE VELDT-FOGLIA: Thank you, Mr. Court Officer.

MS. CARIOLOU: If we could turn on page 2 of the paper,

paragraph m.

Q. Mr. Goodwin, perhaps you could read for us paragraph m, what is stated at paragraph m, for the record.

PRESIDING JUDGE VELDT-FOGLIA: I propose that you read it --

MS. CARIOLOU: That I read it?

PRESIDING JUDGE VELDT-FOGLIA: That you read it.

MS. CARIOLOU: Of course.

Q. It is stated there:

"The Search process must follow basic investigative and criminalistics principles in order to guarantee the reliability of the results, regardless of the main purpose of the project or mandate of a given mechanism (criminal proceedings and/or humanitarian action). In this sense, documentation and preservation of evidence, chain of custody, secure and appropriate storage, et cetera, are required to maintain the integrity of the evidence and information collected, and thus the quality and reliability of the results."

Would you -- and here comes the question.

Would you agree with me that the most important evidence for DNA testing would be the electropherograms?

A. The electropherograms are important for the interpretation of the DNA profile.

Q. And this is my last question, really.

Can you vouch for the quality and the reliability of the results presented in the reports of 2009 and 2023, despite the fact that the electropherograms are not available for review and have been

destroyed?

A. Without seeing the electropherograms, I cannot comment on the interpretation of them.

Q. Thank you, Mr. Witness.

MS. CARIOLOU: I have no further questions.

PRESIDING JUDGE VELDT-FOGLIA: Thank you, Defence Counsel. I see the other Defence Counsel standing.

MR. AOUINI: Sorry, Your Honour.

PRESIDING JUDGE VELDT-FOGLIA: You have the floor.

MR. AOUINI: Just allow us a couple of moments to go back to some corrections of the transcript.

PRESIDING JUDGE VELDT-FOGLIA: Yes.

MR. AOUINI: Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Yes, you may.

MS. CARIOLOU: [Microphone not activated]

PRESIDING JUDGE VELDT-FOGLIA: Please, your mic -- yes, thank you.

MS. CARIOLOU: Oh, yes. I believe there is a correction required on page 20 of the transcript, lines 5 to 8.

PRESIDING JUDGE VELDT-FOGLIA: Allow to us go there. Page 20, lines 5 to 8. Please proceed.

MS. CARIOLOU: I'll just state the question again just so that we make sure that it is correctly transcribed. The question was: Is it correct that allele detection thresholds in relative fluorescence units, RFUs --

PRESIDING JUDGE VELDT-FOGLIA: Wait, wait. Please.

MS. CARIOLOU: -- are set to define -- to define the height of peaks on an electropherogram below which allele dropout is considered to be possible.

And there is another correction that I see here. On page 30, line 1 -- oh, yes, I see. It should read that the witness has said that there would be a expectation, not exception.

PRESIDING JUDGE VELDT-FOGLIA: That is --

MS. CARIOLOU: Is what we had confirmed with the witness earlier on.

PRESIDING JUDGE VELDT-FOGLIA: Yes, that is in line 1 and line 2 of page 30 of the provisional transcript. The word "exception" should read as "expectation."

MS. CARIOLOU: Only the first time. I believe that because it's a correction, it was originally transcribed as "exception" and we corrected it to say "expectation" and not "exception."

PRESIDING JUDGE VELDT-FOGLIA: Okay. Very well.

MS. CARIOLOU: Perhaps it would make sense [Overlapping speakers] ...

PRESIDING JUDGE VELDT-FOGLIA: Yes.

MS. CARIOLOU: Thank you, Your Honours.

PRESIDING JUDGE VELDT-FOGLIA: No any further adjustments for now? No. Good. Thank you.

Thank you, Defence Counsel.

Mr. Prosecutor, would you like to re-direct -- do a re-direct

examination of the witness?

MR. DE MINICIS: I have one question for the witness, Your Honour.

PRESIDING JUDGE VELDT-FOGLIA: Very well. You may proceed.

Re-examination by Mr. De Minicis:

Q. Mr. Goodwin, you have been very clear today about the information that was made available to you and the information that was not. And you equally stated when the lack of information prevented you from drawing certain conclusions or making observations.

Based on the information that you received, do you have any reason to believe that the DNA profiles were incorrectly extracted or interpreted by the Czech laboratory?

A. I have no reason to expect -- to think that mistakes were made by the Czech laboratory, based on what I have seen.

MR. DE MINICIS: Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Thank you, Mr. Prosecutor.

The document can be taken down, Mr. Court Officer. Thank you.

Victims' Counsel, do you have any questions?

MR. LAWS: Yes. May I ask just one or two questions, please.

PRESIDING JUDGE VELDT-FOGLIA: Please proceed.

Questioned by Victims' Counsel:

Q. Mr. Goodwin, is it unusual for forensic scientists to have to work with very small amounts of DNA or degraded samples?

A. It is not -- it is the typical material that forensic

laboratories, especially criminal laboratories, are faced with, or laboratories that work in criminal case work.

Q. Thank you. Is it unusual for laboratories of that kind to have to work with a partial profile?

A. Again, the answer is no. It is very common for laboratories that deal with criminal case work to work with partial profiles.

Q. Thank you.

MR. LAWS: May we look at the document which was shown to the witness by Defence Counsel which shows the profile in this case. With Your Honours' leave, its ERN is 110670 to 110674.

PRESIDING JUDGE VELDT-FOGLIA: Please proceed.

MR. LAWS: And when we have it, if we could come down to 110672, please. Thank you.

Q. Mr. Goodwin, you will recall being asked a number of questions about the missing data on this profile by Defence Counsel. You recall those questions?

A. I do.

Q. And my question for you is this: Do the probability calculations that you have told us about take into account the fact that there is some missing data here or do they ignore it?

A. I would just correct one sort of part of that question. Data is not necessarily missing.

Q. No.

A. It's -- the data is there. It is just shown once when it is a homozygote.

Q. Yes.

A. So there's nothing -- can you repeat the question, sorry. So the probability calculations have used all the information within there including the presence of homozygote alleles when making the calculation as to relatedness.

Q. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Victims' Counsel, I understand you have no more questions. No.

Victims' Counsel, you have no more questions?

MR. LAWS: I have no more questions, Your Honour. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Good. We noted that.

Defence Counsel, would you like to continue with rejoinder examination of the witness? And if yes, how long will you need?

MS. CARIOLOU: Just one clarification on the basis of the last answer.

Further Cross-examination by Ms. Cariolou:

Q. Mr. Goodwin, is there any indication in the report that the alleles were homozygote, in the report that we just discussed?

A. The alleles as presented I would interpret as being homozygote. Normally, if we felt there was a missing allele, that would be indicated by some mechanism, depending on the laboratory. But typically, in this format, this is how I would expect homozygotes alleles represented.

Q. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Thank you. No more questions

from the Defence neither.

I will now verify among the Panel if we have any questions for you, Mr. Goodwin.

[Trial Panel confers]

PRESIDING JUDGE VELDT-FOGLIA: Mr. Goodwin, from the side of the Panel there are no questions, so that means that we reached the end of your testimony. I would like to thank you for your efforts put into giving your testimony before this Court and assisting the Panel to find the truth.

So, again, thank you, and I wish you a safe trip home. And Madam Court Usher will accompany you out of the courtroom.

THE WITNESS: Thank you, Your Honour.

[The witness withdrew]

PRESIDING JUDGE VELDT-FOGLIA: Thank you, Madam Court Usher.

Very well. In one session we did this.

Before we adjourn, I would like to ask the parties and participants to see if there is something you would like to raise with the Panel.

Mr. Prosecutor.

MR. DE MINICIS: Not at this time, Your Honour. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

Victims' Counsel, you have the floor.

MR. LAWS: No, thank you, Your Honour.

PRESIDING JUDGE VELDT-FOGLIA: Very well.

MR. GILISSEN: Same, Your Honour. Nothing. Thank you.

PRESIDING JUDGE VELDT-FOGLIA: Thank you.

Then we will then thank our -- especially our stenographer today. It was a difficult exercise, and next time we will all do our utmost to speak slower to assist you in this work.

Thank you to the interpreters for today and our security and the audiovisual booth.

We will adjourn the hearing till after the judicial summer recess and the first time we will meet again will be 21 August, 9.30.

The hearing is adjourned.

--- Whereupon the hearing adjourned at 10.52 a.m.