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Judgment: approved by the court for handing down (subject to editorial corrections)*	*Delivered:* **26/06/2023**

IN THE CROWN COURT IN NORTHERN IRELAND SITTING AT BELFAST

_____

THE KING

v

DARREN GLEESON

_____

RULING

_____

COLTON J

Introduction

[1] The defendant is charged with a series of counts arising from his alleged attendance at meetings in Ardcarn Park, Newry between 11 August 2014 and 11 November 2014.

[2] It is alleged that these meetings involved members of a proscribed organisation who were engaged in conspiracies to possess firearms and ammunition and to prepare terrorist acts.

[3] It is alleged that the defendant Gleeson attended at Ardcarn Park on 12 August 2014 and 3 October 2014.

[4] Part of the evidence relied upon by the prosecution arises from a number of expert reports prepared by Professor French and Dr Kirchubbel of J P French and Associates ("JPF"). In their various reports they assert that there is "strong support" for the proposition that one of the individuals speaking at the two meetings in question is the defendant, Darren Gleeson. These conclusions are based on "forensic voice analysis" whereby JPF carried out a forensic voice comparison exercise which was effected firstly by comparing sections of audio recordings of the meetings with a PACE interview recording of the defendant from 2002 and subsequently comparing sections of the audio of the meetings with recordings of telephone calls made by the defendant whilst he was in prison after his arrest for these offences. The audio tapes from the meetings arose from covert surveillance of the premises in Ardcarn Park in which covert listening devices had been placed by the security services. There is no

challenge to the authenticity of those recordings. Nor is there any challenge to what the prosecution say was actually said in the meetings. What is in issue is the attribution of some of what was said to the defendant Gleeson.

[5] The court received a series of reports from JPF and heard evidence from Dr Kirchubbel. The court also received a series of reports from Professor Harris, a professor in linguistics and from Alan Hirson, a Forensic Speech Scientist, retained by the defendant who also gave evidence at the trial. He challenged the conclusions of JPF arguing that their work was vulnerable to confirmation bias and that its methodology was flawed.

[6] The defendant challenges the admissibility of the conclusions of JPF. He applies to have them excluded as evidence in the trial.

[7] The court received lengthy written and oral submissions from Mr Dessie Hutton KC who appeared with Sean Devine for the defendant and from Mr Ciaran Murphy KC who appeared with Mr David Russell for the prosecution. The court is grateful for counsels' assistance in assessing highly technical evidence and for directing the court to the relevant legal principles.

The defence submission

[8] The defendant raises four issues which he says either individually or cumulatively mean that the JPF evidence should be excluded. These can be summarised as follows:

(i) The PACE interview recording

[9] Issue is taken with the lawfulness and fairness of the use of the PACE interview recording by police as the basis for the forensic comparison exercise. It is submitted that the evidence from the PACE interview recording should be excluded in accordance with Article 76(1) of the Police and Criminal Evidence (Northern Ireland) Order 1989 ("the 1989 Order"). Should such evidence be excluded it is submitted that it would follow that the forensic voice comparison conclusions relying as they do, in part, on this evidence would likewise fall to be excluded for this reason.

(ii) Prison telephone recordings

[10] Issue is taken with the lawfulness and fairness of the use of the prison telephone recordings by police as a basis for the forensic comparison exercise. It is submitted that the evidence from these recordings should be excluded in accordance with Article 76(1) of the 1989 Order with similar consequences for the forensic voice comparison conclusions.

(iii) R v O'Doherty [2002] NICA 20

[11] Issue is taken with the admissibility of the forensic voice comparison exercise as it is said that it did not satisfy either the spirit or the letter of the strictures of the Court of Appeal's judgment in *R v O'Doherty* [2002] NICA 20 regarding what is required for forensic voice comparison evidence in this jurisdiction.

(iv) Cognitive bias

[12] Issue is taken with the forensic voice comparison of JPF in toto on the basis that it is tainted by cognitive bias and should be excluded in accordance with Article 76(1) of the 1989 Order.

Article 76

[13] The exclusion of unfair evidence in a criminal trial is provided for under Article 76 of the 1989 Order (PACE). It provides:

> **"Exclusion of unfair evidence**
>
> **76.–**(1) In any criminal proceedings the court may refuse to allow evidence on which the prosecution proposes to rely to be given if it appears to the court that, having regard to all the circumstances, including the circumstances in which the evidence was obtained, the admission of the evidence would have such an adverse effect on the fairness of the proceedings that the court ought not to admit it."

[14] A decision to exclude evidence under Article 76 of PACE does not have to be settled in a voir dire. In this case the court has had the benefit of hearing virtually all of the prosecution evidence (there are some minor remaining issues to be dealt with – which may be capable of agreement with the defence). Thus, the court has heard the disputed evidence in the trial.

[15] The breadth of the discretion under Article 76 is obvious. The court must have regard to "all the circumstances" in which the evidence was obtained. Ultimately the test is whether the admission of the evidence "would have such an adverse effect on the fairness of the proceedings that the court ought not to admit it."

[16] I will analyse each of the issues raised in turn.

(i) PACE interview recording

[17] JPF relied upon two PACE interview recordings conducted with the defendant in 2002 for their initial evidential voice comparison. A defendant

interviewed under PACE is given a caution at the commencement of the interview in the following form:

> "You do not have to say anything, but I must caution you that if you do not mention when questioned something which you later rely on in court, it may harm your defence. If you do say anything it may be given in evidence."

[18] The purpose of the caution is three-fold as indicated by HHJ McFarland in *R v Periera (Marino) & Soares (Marito)* [2011] NICC 39 para 12:

> "[12] Its purpose is three-fold. First to alert the interviewee that he is entitled to remain silent – 'you do not have to say anything.' This confirms the common law right of silence and the right against self-incrimination, which right is also contained within the European Convention on Human Rights. Secondly, the interviewee is warned that in certain circumstances a court could draw an inference in his failure to answer some of the questions – 'but I must caution you that if you do not mention when questioned something which you later rely on in court, it may harm your defence.' This inference may be drawn by virtue of the provisions of the Criminal Evidence (NI) Order 1988 (as amended by para 61(3)(b) of Schedule 10 to the Criminal Justice Public Order Act 1994). It does not erode the right to silence, but merely alerts the interviewee to the possibility that his defence may be harmed by a court drawing an adverse inference should he later rely on something that he could have told the police during the interview. Finally, the interviewee is alerted to the fact that anything that he does say may be given in evidence at a trial – 'if you do say anything it may be given in evidence.'"

[19] Mr Hutton argues that the wording of the caution and the objectives as outlined by HHJ McFarland point towards the contents of the interview being used solely for the purposes of evidence in relation to the case under investigation and not for an entirely different purpose in a different case 20 years later.

[20] He argues that it would not have been within the contemplation of the parties that the recording itself would be retained and then used in the manner of a "sample" akin to DNA or fingerprint data for the purposes of subsequent identification in respect of an entirely different offence.

[21] Certainly the defendant would not have been cautioned or warned about this potential use at the time of interview.

[22] This submission is reinforced by the provisions of Article 38 of the 1989 Order which would have been in operation in 2002. Article 38 provides for the interview of a person whilst in custody after arrest. Thus:

> " (1) Where –
>
> (a) a person is arrested for an offence –
> …
>
> (2) If the custody officer determines that he does not have such evidence before him, the person arrested shall be released either on bail or without bail, unless the custody officer has reasonable grounds for believing that his detention without being charged is necessary to secure or preserve evidence relating to an offence for which he is under arrest or to obtain such evidence by questioning him."
>
> (Emphasis added)

[23] Thus, a person arrested for a suspected offence can only be detained thereafter and interviewed for the purpose of obtaining evidence by questioning relating to an offence for which he has been arrested.

[24] That this was the contemplated use of such a tape is further supported by the provisions of the Code then in operation. The then applicable Code E on the Tape Recording of Interviews with Suspects provided at paragraph 4.21 as follows:

> "4.21 The suspect or an appropriate adult or an interpreter shall be handed a notice which explains:
>
> (i) the use which will be made of the tape recording,
> (ii) the arrangements for access to it,
> (iii) that a copy of the tape shall be supplied as soon as practical if the person is charged or informed that he will be prosecuted."

[25] Para 6.4 then provided:

> "6.4 At the conclusion of criminal proceedings or in the event of a direction not to prosecute the contents of a working copy of the tape shall be completely erased.

> Such tapes shall not be reissued for the purpose of recording interviews."

[26] Of particular relevance on this issue is the decision of the Divisional Court in *Re Corbett's Application* [2016] NIQB 23.

[27] In that case, tapes recorded during a Terrorism Act 2000 (the 2000 Act) detention were in issue. The Police Service of Northern Ireland (PSNI) had refused to give the applicant an undertaking that his voice would not be recorded for the purposes of analysis in respect of a future investigation.

[28] Under the 2000 Act the Secretary of State had issued a code of practice on the audio recording of interviews (the audio code). Para 2.2 of the audio code directs that one tape, the master tape, will be sealed before it leaves the presence of the detained person, and a second tape will be used as a working copy. Para 4.27 provides the detained person shall be handed a notice at the end of the first interview which explains, inter alia, the use which will be made of the tape recording, the period of retention of the tape and the arrangements for destruction of the tape.

[29] The relevant notice has a section entitled "the use which will be made of the audio recording":

> "The interview has been audio recorded using a single twin or triple deck tape recorder. One of the tapes has been sealed in your presence and will be kept securely in case it is needed in court (this tape is known as the "master tape"). The other tape will be a working copy to which the police and you or your solicitor may listen if you wish. Both tapes are protected against tampering."

[30] Section 8 of the audio code deals with tape destruction:

> "(i) At the conclusion of criminal proceedings, or in the event of a direction not to prosecute, the contents of a working copy of the tape shall be completely erased. Such tapes shall not be reissued for the purpose of recording interviews.
>
> (ii) Unless the provision of the Criminal Procedure Investigation Act 1996 Code of Practice applies or unless civil proceedings have been instigated or it is clear that none will be, master tapes will be destroyed 6 years after the date of the interview."

[31] In reference to section 8 of the code, the court held at para [8]:

> "The criminal proceedings to which reference is made in the first of the paragraphs are clearly those potentially arising from the matters in respect of which the interview was conducted. The purpose of the paragraph is to ensure that the working copy is only available during the period that such proceedings are ongoing. That tends to suggest, therefore, the use to be made of the working copy of the tape is connected to those criminal proceedings."

[32] The court in *Corbett* also considered the powers relating to the video recording of interviews of those arrested under the Terrorism Act 2000.

[33] Like audio recordings the Code of Practice in relation to the use of video recordings provides for the service of a notice on the detained person.

[34] Significantly that note includes the following:

> "[The recording will not be used for any other purpose.]"

[35] In its judgment the court noted the similarity within the codes. At para 15 Morgan LCJ says:

> "[15] We note, however, that there are similarities within the codes. Primary among those is the approach to the retention of tapes. We have set out in para 7 above those contents of the audio Code which show that the question of destruction is directly related to the investigation in respect of which the interview was conducted. That approach is repeated in the Annex containing the form which is made available to the interviewee at the end of the first interview. This is a strong indicator, therefore, that the use to which the tapes can be put is also related to the progress of the investigation in respect of which the interview was conducted.
>
> [16] Secondly, we consider that the interpretation advanced on behalf of the respondent was that the passage set out at paragraph 10 above meant the tapes could be used by police for any police purposes. Such a broad entitlement gives rise to the risk of arbitrary use absent any express conditions or protections. The body of the Code of Practice is silent on the extent of the use of the working tape which can be made by police. The context set by the provisions on tape destruction point towards

> the working copy only being used for matters connected to the investigation in respect of which the interview was conducted. That interpretation also guards against arbitrary use. For these reasons we consider that is to be preferred."

[36] The court therefore concluded:

> "[17] The interview working tapes retained under the audio Code can only be used in criminal or civil proceedings or an investigation of a complaint of ill treatment related to the interviews conducted with the person detained. In light of this finding, we do not consider it necessary to make any declaration."
>
> [my underlining]

[37] Thus, Terrorism Act interview recordings cannot be subsequently used for general police purposes or for subsequent identification in respect of a different offence. Mr Hutton suggests that it would be surprising if the law permitted non-terrorism interview records to be used more freely than interviews conducted under the anti-terror legislation.

[38] Referring to the Code on the tape recording of interviews with suspects (discussed at paragraph [24] above), I am told by Mr Murphy that the PACE recordings used in this case were taken from the master tape which remains available. These were opened following authorisation by Mr Harris, Deputy Chief Constable, on 29 October 2014. Para 6.1 states:

> "The Sub-Divisional Commander in charge of each police station at which interviews with suspects are recorded shall make arrangements for master tapes to be kept securely and their movements accounted for on the same basis as any other exhibit. [See note 6A]."

[39] Para 6.2 of the 1996 version of this code which applied at the time of this interview states:

> "A police officer has no authority to break the seal on a master tape which is required for criminal proceedings. If it is necessary to gain to the access to the master tape (sic) the police shall request the Director of Public Prosecutions to seek the authority of the appropriate court for the seal to be broken, the tape copied, and sealed in the presence of an official appointee of the court. Where no court proceedings have been commenced, but are contemplated

> or are under consideration, the seal will be broken, the tape copied, and resealed in the presence of a legally qualified representative of the Director of Public Prosecutions. In either case the defendant or his legal adviser be informed and given a reasonable opportunity to be present. If the defendant or his legal representative is present, he be invited to reseal and sign the master tape. If this offer is refused or neither is present this shall be done by the official appointee of the court or representative of the Director of Public Prosecutions, as applicable." [See Note 6B and 6C].

[40] Newer versions of this code simplify this procedure but retain an opportunity for either the defendant or his legal advisor to attend the breaking of the seal.

[41] Para 6.3 states:

> "Where no criminal proceedings result, or are under consideration or where criminal proceedings have been concluded it is the responsibility of an Assistant Chief Constable to establish arrangements for the breaking of the seal on the master tape, where this becomes necessary."

[42] Mr Murphy cautions the court against a read across from the decision in *Corbett* to non-terrorist interviews. The applicable PACE codes in this case do not provide for a retention period for the master tape after which time it must be destroyed. He also argues that a key factor in terrorism cases was to protect police officers against false allegations. This is absent from the Code in relation to the interviews at issue here.

[43] He also argues that it is important to distinguish between the content of what is said in the course of an interview as opposed to the use of the voice sample. He argues that this is no more objectionable than using fingerprints or samples of DNA, blood or hair for the purposes of criminal investigations. He refers to the case of *PG v UK* (2008) 46 EHRR 51, in which the European Court said at paragraph 80:

> "[80] In so far as the applicant complained of the underhand way in which the voice samples for comparisons were obtained and that this infringed their privilege against self-incrimination, the court considers that the voice samples, which did not include any incriminating statements, may be regarded as akin to blood, hair or other physical or objective specimens used in forensic analysis and to which privilege against self-incrimination does not apply."

It is important to note, however, that this case involved voice samples from covert surveillance and not from interviews with suspects under the PACE provisions.

[44] Importantly, when considering whether to exclude the evidence he says that the defendant does not identify any adverse effect on the fairness of these proceedings.

[45] In the course of submissions, Mr Hutton referred the court to extensive jurisprudence to argue a breach of the defendant's rights under article 8 of the ECHR. Of course, article 8 is a qualified right and is subject to such interference as is necessary and proportionate, in this instance, according to the prosecution, for the prevention of crime.

[46] I do not consider it necessary to determine this issue based on an analysis of the defendant's article 8 rights.

[47] The court takes the view that the principles in *Corbett*, notwithstanding some of the differences in the relevant codes, apply equally to the circumstances of this case.

[48] This interpretation is entirely consistent with the protections envisaged by the architecture of the 1989 Order in relation to the detention and interviewing of suspects. It is also consistent with the caution given to suspects before they answer questions at interview.

[49] If the practice in question is deemed lawful, solicitors advising clients at interview would be obliged to advise them in every case of the prospect that any words spoken on tape in one interview (in which they might be minded to speak) would or could be used at a later date for the purposes of identification by way of voice recognition. This has the potential of having a "chilling effect" on a suspect. This could be cited as a reason not to speak at interview and thereby avoid any adverse inference that might otherwise be drawn from silence.

[50] The provisions of para 6 of the Code discussed above, suggest that the procedure of breaking the seal on a master recording must relate to criminal proceedings which were the subject matter of the interview, given the right of a defendant or his legal advisor to attend at the breaking of the seal.

[51] I do not consider that there is a read across from voice analysis and data bases in relation to fingerprints or DNA sample data, in the context of a recording of a PACE interview.

[52] If audio tapes of persons interviewed as suspects under PACE are to be subsequently retained and used for other investigations in the way that fingerprint

evidence or DNA evidence might be used then this should be subject to an express regulatory regime, with appropriate conditions or protections.

[53] In accordance with the decision in *Re Corbett* I take the view that there is no basis in law for the use of such audios in these circumstances. In the court's view it runs contrary to the protections provided to suspects under PACE.

[54] Therefore, I conclude that the use of the audio tapes of the defendant's PACE interview from 2002, in particular having regard to the circumstances in which the evidence was obtained, would have such an adverse effect on the fairness of the proceedings that any forensic voice comparison conclusions relying on the tapes of the defendant's PACE interview recording should be excluded.

(ii) Prison telephone recordings

[55] In light of the ruling in relation to issue (i) it is perhaps significant that because of the possible implications of the ruling in *Corbett's Application* consideration was given by the PSNI as to the necessity of obtaining an alternative reference audio. Mr Hutton notes that "the JPF experts themselves entered the fray advocating reasons why their work on the original police interviews should not be inadmissible." The involvement of JPF in the investigation is discussed further in relation to issue (iv).

[56] In any event it was resolved that JPF would be asked to "re-do" their analysis in respect of some of the suspects under investigation.

[57] Gleeson was arrested on 21 October 2016 and interviewed. In the course of the interview, it was suggested to him that he should speak so that this could provide the PSNI with a voice sample. He declined to speak.

[58] He was charged and remanded in custody on 21 October 2016.

[59] On 16 November 2016 police applied to the Prison Service for copies of audio of his personal telephone calls.

[60] Such recordings were subsequently provided and formed the basis of a further exercise carried out by JPF, which confirmed their original opinion based on the comparison carried out by using the PACE interview audio.

[61] In the course of the hearing the court heard evidence from a prison officer on the retention and dissemination of the telephone recordings as follows:

> "I am a prison officer attached to the Security Department at HMP Maghaberry, 17 Old Road, Maghaberry, Lisburn, County Antrim. Following a request under Voluntary Disclosure made by D/Constable Reid on 16/11/2016 I

> produced an Audio Disc on 9/01/2017, containing recordings of six telephone calls made from the Prison by Prisoner D6108 Darren Gleeson, DOB 29/07/1992. I placed this item in a Police exhibit bag and marked it as exhibit BN6. I also produced Gleeson's phone list. I marked this exhibit as BN7. I handed these exhibits to D/Constable Reid at 1300 on 10/01/2017."

[62] The Prison and Young Offenders Centre Rules (NI) 1995, rule 68A allows for the interception and disclosure of prison phone calls. [68A(4)(b) for the prevention, detection and investigation or prosecution of crime].

[63] Mr Murphy points out that the content of the conversations recorded were irrelevant and none of the actual content is relied upon as evidence against the defendant. The court has not heard the entire evidence which is available in relation to the production and dissemination of this material. Mr Murphy indicated that other evidence from more senior persons within the Prison Service is available should this become necessary.

[64] Mr Hutton has made detailed submissions on the jurisprudence in relation to article 8 of the ECHR. He argues that there has been an unlawful interference with the applicant's article 8 rights and that the Prison Service has not demonstrated that it followed its own procedures under the rules.

[65] I accept that the contents of the phone calls in question come within the scope of the protection provided by article 8. However, I am satisfied that the court does not require a detailed analysis of the relevant case law to determine whether or not this particular evidence should be excluded in this trial.

[66] I am satisfied, and indeed there is no dispute, that the tape itself is authentic and relates to the defendant. The circumstances in which the audio was obtained are very different from audio of a PACE interview of a suspect under caution. The defendant can point to no unfairness which would justify excluding this material.

[67] Even if unlawfully obtained or obtained contrary to the protections provided by article 8, I am satisfied that this evidence should not be excluded. I am satisfied that no unfairness arises from its admissibility.

(iii) R v O'Doherty

[68] In the case of *R v O'Doherty* [2002] NICA 20 the court of appeal gave guidelines in relation to the use of voice identification evidence. In that case the appellant had been convicted by a jury of aggravated burglary and of causing grievous bodily harm with intent. Part of the evidence linking the appellant with the offences consisted of the evidence of an expert witness on voice identification called

by the prosecution to the effect that it was highly probable that the appellant was the caller to Ambulance Control.

[69] The conviction was overturned because no warning was given to the jury of the dangers of convicting on voice identification evidence. Per curiam the court decided that in the present state of scientific knowledge, no prosecution should be brought in Northern Ireland in which one of the planks is voice identification given by an expert which is solely confined to auditory analysis. Furthermore, there should also be expert evidence of acoustic analysis including formant analysis. There are three exceptions to this general statement:

(i) Where the voices of a known group are being listened to and the issue is which voice has spoken which words;

(ii) Where there are rare characteristics which render a speaker identifiable;

(iii) Where the issue relates to the accent or dialect of the speaker.

[70] At the trial there was a dispute between the experts as to whether the exercise carried out by JPF complied with the requirements set out by the Court of Appeal in *O'Doherty*.

[71] This dispute centred on whether JPF had in fact carried out a formant analysis.

[72] In describing the process of formant analysis carried out by JPF, their various reports included the following:

> "In parallel with the analytical listening, the recordings were subjected to a series of instrumental, ie, computer based acoustic, tests. These included fundamental frequency tracking of sections of speech and also examinations of the frequency components and time bases of vowel and consonant sounds made via spectrograms, spectral sections and a formant measuring tool. Formant frequency average (F1-F3) was undertaken in respect of multiple instances of vowel phonemes and F1-F2 scatter plots were generated automatically by computer.
>
> The methods used are compliant with the *NI Appeal Court Ruling R v Anthony O'Doherty*…"

[73] Having carried out this acoustic analysis which included a formant analysis the primary conclusion specific to the defendant in the JPF reports was as follows:

> "Vowel formants. Multiple tokens of the vowels /i;/,/a/,/e/,/a/,/o/,/ɔ;(+R)/,/ʌ/,/u;/, and the vocalic element of hesitation markers were identified and compared across the reference and questioned recordings. Alignments were established in respect of the overall distributions within the F1-F2 'vowel space' and within vowel categories, particularly in respect of F2. F1 values tended to be somewhat higher in the questioned recordings, but this is what one would expect when comparing raised and non-raised speech from the same person. The mean value of a third formant (F3) was reasonably well aligned across the known and questioned samples, the averages for the question samples being a little higher overall. The distribution of F3 values was similar… Overall, no forensically significant differences were found…"

[74] The defence criticism of this method focuses on the fact that, contrary to their avowed approach and apparent belief at the time of writing their reports, JPF were not in fact comparing "multiple instances of the same vowel sound occurring in different words" and measurements/averages were not "undertaken in respect of multiple instances of vowel phonemes" in the manner suggested in their reports; and nor were "multiple tokens of the words of the vowels…" identified and compared across the reference and questioned recordings as suggested in their report.

[75] Mr Hirson's criticism in short was that JPF did not recognise the significance of the distinctions between Irish and English accents. He argued that it has long been recognised in phonetic literature that it is problematic to take the vowel system of one accent as a reference point for describing the vowel system of another as one cannot be assured that one system maps onto another in a regular or predictable fashion.

[76] By taking Standard British English (SBE) as a reference point for phoneme analysis JPF had failed to make allowances for such differences.

[77] Mr Hirson argued that the unpredictability of the mapping between different vowel systems has led phoneticians to adopt an alternative method of comparing accents by use of what are known as "lexical sets." Phoneticians can then compare two accents by describing the phonetic quality of the vowel that each accent uses for this particular lexical set.

[78] JPF responded by indicating that they did use the lexical set framework based on SBE and that this was sufficient for valid comparisons between the reference and questioned recordings. Furthermore, having been informed of the defence criticism JPF revisited their analysis by re-examining the impact of /r/ on the lexical sets

north/force/thought. Having done so Dr Kirchubbel's evidence was that "the values still aligned."

[79] These issues were raised in the case of *R v Fitzsimmons and others* [2022] NICC 27. In that case O'Hara J heard evidence from some of the same experts who gave evidence in this case and dealt with precisely the same issues raised. He too heard lengthy and disputed evidence on the point. He dealt with the issue in the following way in paragraphs [51]-[63] of his judgment.

> "**Issue 2**
>
> **Even if it is, have the prosecution experts complied with the requirements laid down by the Court of Appeal in *R v O'Doherty* [2002] NICA 20 when analysing the voices on the recordings and attributing the words spoken to the various defendants? Or having undertaken auditory analysis did the experts fail to undertake acoustic analysis including formant analysis with a result that their evidence as to attribution should be excluded?**
>
> [51] The dangers in relying on voice recognition or purported voice recognition were spelt out by the Court of Appeal in the *O'Doherty* case. The defendant had been convicted of serious offences by a jury in reliance, in part, on the evidence of a police officer who said that he recognised the defendant's voice on a call to the ambulance service, the evidence of an expert witness on voice identification to the effect that it was highly probable that the defendant was the person whose voice was heard and the comparisons which the jury themselves were invited to make. No warning was given to the jury about the evidence of the police officer or the expert.
>
> [52] The Court of Appeal quashed the conviction, relying heavily on the evidence of a new expert witness, a Dr Nolan. As appears from the judgment, among the many critical points made by Dr Nolan were:
>
> • It is rarely, if ever, possible to achieve certainty in identification by voice. A person's voice is quite unlike a fingerprint which is unchanging and unique whereas the voice is variable and it has not been scientifically proven how extensively features of the voice are shared among members of the population.

• While auditory phonetic analysis is good at telling us whether two voice samples have the same accent, once it is established that two samples have the same accent and generally similar voice quality, only quantitative acoustic analysis can go further and come anywhere near determining whether the two samples of the same accent came from the same individual.

• The great weight of informed opinion is that auditory techniques unless supplemented and verified by acoustic analysis are an unreliable basis for speaker identification.

• Auditory (or listening) phonetic analysis tells us principally about the dialect or accent of the speaker; quantitative acoustic (or instrumental) analysis enables one to examine the difference in the acoustic properties of the speech which depend on the individual's vocal tract, mouth and throat.

• An auditory phonetician can helpfully say that it is possible that two samples of speech came from the same speaker. To go beyond that one needs to find an absence of acoustic differences.

[53] In light of Dr Nolan's report for the Court of Appeal, the prosecution was permitted to introduce a report from Dr French who also gave evidence. (This is relevant to the present case in which Dr French personally, together with his colleagues in J P French Associates, gave voice identification evidence on which the prosecution relies.) It appears from the judgment of the Court of Appeal that Dr French agreed with much of what Dr Nolan had said. It is specifically recorded at page 272 of the judgment in relation to Dr French's evidence that: "He routinely carried out acoustic analysis. Auditory analysis and acoustic analysis provided cross-checks against one another. That would be best practice. It would be the general view."

[54] In light of this evidence the Court of Appeal quashed the conviction with the court saying at page 276: `… having heard Dr Nolan and Dr French and read the report of Dr Kunzel, that in the present state of scientific knowledge no prosecution should be brought in Northern Ireland in which one of the planks is voice identification given by an expect which is solely confined to auditory

analysis. There should also be expert evidence of acoustic analysis such as used by Dr Nolan, Dr French and all but a small percentage of experts in the United Kingdom and by all experts in the rest of Europe, which includes formant analysis.'

[55] This background is relevant because the defence challenges the admissibility of the evidence of Dr French and his colleague Dr Kirchubbel because, it is said, they failed to conduct formant analysis. Or to put it differently, they purported to include formant analysis as part of their work but made basic errors in doing so which so undermine their work as to mean that it is not in fact a proper or meaningful quantitative acoustic analysis at all.

[56] This attack was largely based on the expert evidence of Professor Harris who was called on behalf of McCrory. He is originally from Belfast and is now a professor in linguistics at University College, London, with a degree in linguistics and a PhD in Belfast English. The gist of his criticism was that the prosecution experts had gone part of the way in conducting a quantitative acoustic analysis but had reached results which were invalid because of the way in which they failed to recognise the differences between the Northern Ireland accent and what was referred to as `Standard British English' (SBE). The prosecution experts suggested otherwise – they said that they used SBE as a baseline only and that they knew and recognised that were and are differences between accents of people who have lived their lives in Northern Ireland and SBE.

[57] It is important to note the limitations of what Professor Harris could give evidence about and what his criticisms were. He is not an expert in forensic speech or voice analysis or voice comparison. Therefore, he could not have mirrored the work done by J P French Associates and presented the court with any different conclusions. Instead, his evidence is relied on to suggest that contrary to the *O'Doherty* approach there has not been a quantitative acoustic analysis which <u>includes</u> formant analysis. The question therefore is whether the prosecution experts did, in fact, carry out a quantitative acoustic analysis, as they say, but as Professor Harris contests.

[58] I am satisfied that the prosecution experts did conduct a quantitative acoustic analysis which included consideration of a range of different voice components including analysis of voice pitch, speech tempo, speech fluency and vowel and consonant realisations. The evidence of Professor Harris focused on vowels to the exclusion of any other meaningful analysis. Even if his analysis was correct, that is not in itself, in my judgement, sufficient to exclude the evidence and conclusions of J P French Associates.

[59] I am satisfied, however, that Professor Harris is not correct. There is no data base for the population of Northern Ireland in terms of speech. That is why, according to the prosecution experts, SBE has to be used as a baseline as it is in other regions where there is no database. Those other regions are many. It is no criticism of Professor Harris to say that his primary experience is in research and that he does not have expertise (or claim to have expertise) in forensic speech casework. But it is his absence of such expertise that puts him at a real disadvantage when he challenges the prosecution experts.

[60] The prosecution experts gave evidence that they conducted formant measurements of vowels. Professor Harris accepted that. His query was about what they did with those measurements. He was concerned that they had averaged them, which was not an appropriate step. On the other hand they said that they had certainly not done that in relation to F1 and F2 - the position on F3 was not so clear. I accept their evidence which is consistent with their notes and records. From this I conclude that Professor Harris's criticisms are misplaced and are based on a misinterpretation or misunderstanding of what the prosecution experts did.

[61] I am further satisfied of two things. The first is that the prosecution experts did not consider the audio they listened to on the basis that the speakers were using SBE. They knew well that it was an accent or variation variously described as Mid-Ulster or Lagan Valley. The second thing is that I was struck by the attention to detail and expertise of the prosecution experts. They did not, in my judgment, make excessive claims for the reliance which can be placed on their work and they fully acknowledged its limitations.

> [62] I further add that while experts can all make mistakes, it would be quite remarkable if Professor French, who gave evidence in *O'Doherty* and largely agreed with Dr Nolan, made such a basic error in his approach and understanding of his work more than 10 years later.
>
> [63] I reject the application to have the evidence of the prosecution experts excluded on the basis of a failure to comply with the approach required by the Court of Appeal in *R v O'Doherty*."

[80] The similarities between this case and that of *Fitzsimmons* on this issue are obvious. Here the court is dealing with a Dublin accent as opposed to a Mid-Ulster or Lagan Valley accent. At this stage it is important to remember that the court is dealing with an application to exclude evidence as opposed to consideration of the weight of that evidence or its reliability.

[79] The evidence challenged in this case is significantly different from that in the *Flynn* case (see discussion below), relied upon by the defence. There the court was dealing with a scenario where a police officer was carrying out a voice recognition exercise based on another police officer's annotations. Here the court is dealing with expert evidence.

[81] Applying the per curiam comments of the Court of Appeal in *R v O'Doherty*, I am satisfied that the expert evidence in this case is not "solely confined to auditory analysis." True it is that there is a dispute as to the method of the acoustic analysis including formant analysis carried out by JPF in this case. The merits or otherwise of the critique offered by the defence experts goes to the weight of that evidence or the extent to which it can be relied upon by the court. Thus, in the scenario of a jury trial, this particular issue could be adequately dealt with by appropriate warnings to the jury. The court does not consider it could be said that the admission of this admittedly disputed and limited evidence would have such an adverse effect on the fairness on the proceedings that it ought not to be admitted.

(iv) Cognitive Bias

[82] As was the case in relation to the critique of the analysis carried out by JPF, the issue of cognitive bias was one of significant contention at the trial.

[83] On this issue the defence placed particular reliance on the forensic science regulators guidance. At the risk of unduly lengthening this ruling, I propose to set out extensive extracts from this guidance. They are a useful reminder both to experts and lawyers of the importance of guarding against the risks of bias in the use of forensic science in criminal prosecutions:

"1.1.2 There is a tendency to display bias in judgments that are made in everyday life, indeed this is a natural element of the human psyche. Jumping to a conclusion, tunnel vision, only seeing what is expected/wanted, being influenced by the views of others, all are recognisable behaviours.

1.1.3 However, whilst such biases may be commonplace and part of human nature, it is essential to guard against these in forensic science, where many processes require subjective evaluations and interpretations. The consequences of cognitive bias may be far reaching; investigators may be influenced to follow up particular line of enquiry or interpretation of a finding that may be incomplete, or even wrong.

1.1.4 Simply because there is a risk of a cognitive bias does not imply that it occurs. The problem is that as it is a subconscious bias it is unlikely that an individual will know either way and therefore it is wise that all practitioners understand the issue and take proportionate steps to mitigate against it.

1.2.1 There are a number of categories of cognitive bias described in more detail in the body of the text.

(a) Expectation bias, also known as experimenter's bias, where the expectation of what an individual will find affects what is actually found.

(b) Confirmation bias is closely related to expectation bias, whereby people test hypotheses by looking for confirming evidence rather than potentially conflicting evidence.

(c) Anchoring effects or focalism are closely related to both of the above and occur where an individual relies too heavily on an initial piece of information when making subsequent judgments, which are then interpreted on the basis of the anchor.

(d) Contextual biases where someone has other information aside from that being considered, which influences (either consciously or subconsciously) the outcome of the consideration.

(e) Role effects are where scientists identify themselves within adversarial judicial systems as part of either the prosecution or defence teams. This may introduce subconscious bias that can influence decisions especially, where some ambiguity exists…

1.3.1 In many disciplines there is a spectrum of bias risk that is shaped by multiple factors including the following:

(a) Risks of bias are lower when results are clear and unambiguous and greater when results are complex, of poor quality and there is an increased reliance on subjective opinion.

(b) Risks are lower where there is a methodical approach which defined standards built on principles that have been tested and validated and greater when the approach is unresearched, ad hoc and personal to the practitioner.

(c) Risks are lower when practitioners and checkers are well trained, experienced and continuously meet exceptional standards of competence; they are greater when practitioners and checkers are inexperienced, unmonitored and left to adopt their own approach.

(d) Risks are lower when interpretation is checked by a competent peer who conducts a separate interpretation fully independently and without influence from the reporting scientist. Risks are higher when checking is less rigorous and/or conducted collaboratively.

1.4.1 The most powerful means of safeguarding against the introduction of contextual bias is to ensure that the practitioner conducting the analysis only has information about the case that is relevant to the analysis. Often more information is required to ensure effective case assessment and examination strategy setting, and where this is required, then case management can be performed by a leading practitioner.

1.4.2 Controlling the flow of task – irrelevant information to analysts is sometimes referred to as sequential unmasking. This guidance document advocates a structured approach, where decisions on the suitability of the results and marks for later comparison are made prior to comparison with the reference samples.

1.4.3 Most structured approaches are not entirely linear. Initial analysis of the trace evidence may be revisited once the reference material is considered, provided that any changes to the findings are documented, with an explanation of the reasons. However, the policies adopted should be designed to avoid post - comparison, rationalisation or circular reasoning where the decision maker begins with what they are trying to end with. The aim is to ensure that the decision process is transparent and, as it is recorded in the case file, it is of course disclosable.

…

4.2.3 Confirmation bias is closely related to expectation bias, whereby people test hypotheses by looking for confirming evidence rather than for potentially conflicting evidence. For example, in the evaluation of DNA mixtures, if the reference sample is compared before the Crown profile has been interpreted, confirmation bias would result if the analyst then looked only for features supporting the inclusion of the reference profile within the mixture. Some verification processes have the potential for confirmation bias if the verifier has knowledge of the original examiners findings before reaching their own conclusions. They may also be influenced by the experience or status of the previous examiner where these are known (so-called conformity effects and institutional bias).

…

4.2.6 Contextual bias is where someone has other information aside from that being considered, which influences (consciously or subconsciously) the outcome of the consideration. Psychological research has demonstrated that perception is responsive to both the individual's psychological and cognitive state along with the environment in which they are operating. For

example, a scientist working within a police laboratory could be influenced by knowing that the detectives believe that they have a strong suspect, or that the suspect has already confessed to having committed the crime. Provision of information not required by the scientist to undertake the evaluation and that potentially influences this type of bias has been termed 'psychological contamination' or 'cognitive contamination' , as opposed to the more widely understood issue with forensic science 'physical contamination' .

4.2.7 Role effects are where scientists identify themselves within adversarial judicial systems as part of either the prosecution or defence teams, and this may introduce subconscious bias that can influence decisions, especially where some ambiguity exists. In fibre examinations when potential contact between two textile items is under consideration but no matching fibres are found, cognitive bias may be seen from a scientist acting on behalf of the prosecution, and interpreting the findings as neutral rather than considering whether the absence of matching fibres might support the view that the contact had not occurred…

4.4.1 The most powerful means of safeguarding against the introduction of contextual bias is to ensure that the practitioner conducting the analysis only has information about the case that is relevant to the analysis. However, in controlling the risk of bias, it should be borne in mind that without relevant information, case assessment, targeting and interpretation may be hampered and therefore introduce a risk of its own.

4.4.2 With this in mind, most forensic science providers would be able to take in the full picture and yet control and/or stage the flow of information to the individual conducting the actual analysis, thus ensuring both risks are managed (see section 5). If this is the mitigation strategy used, then careful records with dates and times need to be kept to ensure that there is no confusion about the order of disclosure and analysis. Also, the analyst needs to be aware that the information flow is likely to be staged and to avoid direct contact with the investigating officer prior to assessment.

…

4.4.6 However, some forensic science practitioners are in sole practice, so the instructing agency needs to have a role in managing the information flow and therefore needs a working knowledge of the issues. In such situations, the practitioner may need to ensure that the officer in the case is aware of what appropriate information, images and disclosure is required at different stages of the investigation. Both the instructing agency and practitioner should keep careful records with dates and times to ensure that there is no confusion with the order of disclosure and analysis. The practitioner also ought to prompt the instructing agency if and when fuller disclosure is appropriate, but also to ensure that if a finding is subject to review this status is made clear. It could be damaging to the investigation if initial findings are acted on when viewing the reference material is considered as science; it could also be damaging to how an expert is perceived if a finding is changed in light of the reference material and the recipient of the preliminary report was not made aware of this possibility.

…

4.4.17 Role effects whereby scientists are subconsciously influenced by acting on behalf of the defence or prosecution are difficult to demonstrably eliminate given the adversarial nature of the CJS. These effects are potentially compounded by the pressures of a commercial market, in which a supplier/customer relationship for the delivery of forensic science is the norm. These pressures apply whether a forensic science provider (FSP) is providing contracted services to the prosecuting side or to the defence, or in the case of police laboratories is providing services to an internal customer.

…

5.1.1 The appropriate flow of information is very important in all cases; one limiting factor in the assistance that forensic science can give to an investigation is pertinent information not being passed on. Contextual or case information should be made available to the lead scientist for case building purposes. The lead scientist can then ensure that analysts receive only the information appropriate for that stage, while still ensuring that proper

case assessment can be made and that the most appropriate techniques are used.

5.1.2 However, when instructing experts in sole practice, the onus is placed on the investigating officer (or instructing authority) to manage the flow of information. The expert is still likely to need the contextual or case information, but this may be required to be held back until certain analytical stages are complete.

5.1.3 Anybody instructing experts should always avoid including comments such as the 'suspect admitted to the crime', 'we already have a DNA match', or even in the question asked '…can you identify whether suspect A (the stabber) is carrying anything and if he is, what that item is…' Being exposed such information does not automatically result in a biased decision but it can have an influence and should be guarded against.

…

11.4.1 One of the greatest risks of introducing cognitive bias is in the way that the material is provided for assessment. Examiners should only be provided with the information relevant to the examination of the item image, and in the first instance they should only be asked to describe what they see. The latter guards against confirmation bias which is almost inevitable if the question asked is along the lines of 'do you agree that this is item/individual X?', or the examiner asks to be told what the item is so that they can consider whether or not they agree. Not being provided with the case notes and other extraneous information prior to the examination of the comparison task at hand helps to safeguard against contextual bias. For the same reason it is better for the analyst to receive a written briefing regarding the comparison to be made rather than being in direct verbal contact with the investigator so that the opportunity for the transfer of non-relevant and potentially biasing information (both contextual and confirmatory) can be avoided.

11.4.2 …Independent assessment of critical findings is also crucial. Independent checking that minimises the risk of cognitive bias entails assessment without knowing the outcome of the initial analysis or even, where possible,

> the identity of the original examiner in order to avoid confirmation bias."
>
> [underlining added]

[84] An Appendix to the Code specific to Speech and Audio Forensic Sciences states in respect of checking of findings and conclusions at paragraph 6.1.1.b that:

> "b. The review of critical findings which shall be carried out by another competent practitioner experienced in forensic science in the same field (the reviewer). The reviewer will examine the case records and digital copies of recordings. In addition to checking these critical findings, the reviewer shall check that an appropriate range of analyses has been carried out satisfactorily, and the results obtained are replicable. The reviewer shall not be aware of the initial practitioner's conclusion(s) drawn from the findings. Rather, reviewers will draw and record their own conclusion(s) before having knowledge of the practitioner's conclusion(s)..."

[85] Bearing in mind this guidance and the importance of focusing on the potential adverse effect on the fairness of the proceedings should the court exclude the disputed evidence? I now turn to some of the important evidence in this case.

[86] The starting point for Mr Hutton's submissions relates to the fact that when initially instructed JPF were provided with the police attributions in the transcripts prepared by them. I do not understand it to be in dispute that these attributions do not constitute evidence against the defendant.

[87] It is argued on behalf of the defendant that the seeds of potential bias were sown at that stage. JPF argue that their role was to test the theory being put forward by the police by applying their expertise. This would be no different, it was argued, than comparing fingerprints or DNA.

[88] Specifically on the discrete issue of the provision of an annotated police transcript Mr Hutton relies on the decision of *R v Flynn* [2008] 2 Cr App R 20 where the Court of Appeal in England and Wales stated [emphasis added].

> "53. There are other reasons why, in our judgment, the judge ought also to have excluded the evidence under s.78 of PACE. First, in our opinion, when the process of obtaining such evidence is embarked on by police officers it is vital that the process is properly recorded by those officers. The amount of time spent in contact with the defendant will be very relevant to the issue of familiarity.

> Secondly, the date and time spent by the police officer compiling a transcript of a covert recording must be recorded. If the police officer annotates the transcript with his views as to which person is speaking, that must be noted. **Thirdly, before attempting the voice recognition exercise, the police officer should not be supplied with a copy of a transcript bearing another officer's annotations of whom he believes is speaking. Any annotated transcript clearly compromises the ability of a subsequent listener to reach an independent opinion.** Fourthly, for obvious reasons, it is highly desirable that such a voice recognition exercise should be carried out by someone other than an officer investigating the offence. It is all too easy for an investigating officer wittingly or unwittingly to be affected by knowledge already obtained in the course of the investigation."

[89] The issue of cognitive bias was also considered by O'Hara J in *R v Fitzsimmons & Others* [2022] NICC 27. In addressing this issue O'Hara J said as follows:

> "[70] In summary form, what happened was that J P French Associates were engaged by the prosecution to provide their expert view on the degree, if any, to which the dialogue on the audio could be attributed to any or all of the three defendants. To equip them for this task the police sent the Lurgan audio together with comparison samples of the defendants speaking in different circumstances e.g. at a public meeting, answering questions in police custody etc.
>
> [71] In addition, however, they were provided with the police transcript <u>including</u> the attributions to the three defendants i.e. who spoke each sentence.
>
> [72] The experts were also provided with the personal details of each defendant in terms of name, address, date of birth and place of birth. While this too was challenged there appears to me to have been justification for it because it would be necessary for the police not to engage as experts anyone who had a conflict of interest because they had advised any of the defendants in the past.
>
> [73] The most controversial element is the degree, if any, to which the analysis by the experts of the voices and their conclusions as to attribution may have been influenced by them having been given the view of the

police, not just on what was said but also on who said it before they started their own independent analysis.

[74] The prosecution experts agreed in their evidence that the way in which they received this attribution can give rise to the risk of bias. And not only did they receive the transcript with attributions, but they also had meetings at different points with the police before their expert reports were finalised. One of these was a meeting on 16 April 2014 between two police officers and Dr French and his colleagues during which there was "collective listening" to an enhanced version of DL4 and discussion around the identity of the defendants and attribution.

[75] The J P French Report was sent to the PSNI on 6 May 2014. The opinion offered was that the voices of Fitzsimmons and Duffy were moderately distinctive to the expert ear with the voice of McCrory being highly distinctive.

[76] In November 2017 an issue arose in relation to Fitzsimmons because it turned out that one of the reference samples of his voice, on a phone call, was not actually his voice at all but was the voice of a Mr Conway. This obviously raised an issue about the reliability of the expert finding about Mr Fitzsimmons' voice on the Lurgan audio. It also therefore raised questions about the reliability of the findings in relation to the two co-accused.

[77] As a result Dr Kirchubbel, an expert within J P French Associates, was tasked to provide a separate and new analysis. But she too was given, and her report referred to the police transcript with attributions. Her conclusions did not differ in any meaningful or significant way from those of Dr French in his May 2014 Report.

[78] Accordingly, in this case what happened was that the experts were briefed by the police on who the suspects were and who the police believed said which words. To a considerable degree the experts agreed with the police view. Even when the Conway/Fitzsimmons issue emerged, the new expert, Dr Kirchubbel, who was not, in fact, entirely new to the process at all did a further analysis still referring to the police transcript with attributions.

[79] I have already referred in this ruling to the recognition that voice identification is not and cannot be as definitive or scientific as fingerprint or DNA evidence. This alone makes it all the more important that any risk or hint of bias is removed as completely as possible from the analysis.

[80] I have been provided with a significant number of authorities, speeches and reports which emphasise the importance of maintaining the independence of expert witnesses by excluding from their brief information which is capable of influencing their approach to evidence or their analysis of it. To be fair to the experts in this case the awareness of this issue has increased significantly since they did their primary work in 2014 but it is an issue to which everyone involved, the police and the experts, should have been alive in 2014. I am concerned that there is a real risk that the unfortunate combination of factors referred to above gives rise to more than a possibility that the work of J P French Associates was influenced in a manner which makes the admission of their evidence as to attribution of words unfair. Accordingly, I exclude from the evidence in this case their attribution of words to the various defendants.

[81] It is not part of my role to be prescriptive as to what should be done better in the future. There are too many variables about what might happen in the different circumstances of each case. However, I suggest that it will almost inevitably be inappropriate to provide experts with a transcript with attributions in a case as the present. An obviously better and safer route is to provide the evidential audio together with reference samples of one or more suspects/defendants speaking. At that point the question for the experts is whether and with what degree of certainty they can attribute to any individual for whom they have a reference sample words which are spoken on the evidential audio.

[82] It may also be acceptable to provide a transcript of what the police believe was said provided that is done without attribution.

[83] What put this case beyond the line for the expert evidence as to attribution to be admitted is the transcript

> with the attributions together with the meetings at which there were joint discussions.
>
> [84] The net result of the preceding paragraphs is that I admit in evidence the transcript/s of the Lurgan audio but with the attributions of the words which are spoken being removed. To state the obvious, the police's attributions of those words between the defendants is not admissible evidence for the reasons which the Court of Appeal identified in *R v O'Doherty*.
>
> [85] In light of this ruling I do not need to rule separately on the application on behalf of the defendant Fitzsimmons to exclude the forensic speech comparison evidence of Dr French and Dr Kirchubbel. My finding on that is clear from what is set out above. It is excluded. There is no application on behalf of Fitzsimmons to exclude any transcript. In his case, as with Duffy and McCrory, that transcript is admitted but with the removal of attributions. And, in any event, in the case of all three defendants the Lurgan audio which has been played during the trial has already been admitted in evidence."

[90] Mr Hutton submits that a combination of the guidance on cognitive bias and the principles established in *R v Flynn and R v Fitzsimmons & others* applied to the facts of this case should lead to the exclusion of JPF's evidence in relation to attributions of the defendant as the speaker in the audio tapes of the meetings in Ardcarn Park.

[91] Mr Hutton urges the court to adopt and apply the same reasoning of O'Hara J who comments that the JPF analysts appeared not to have the appreciation of cognitive bias at the time of these assessments that they really ought to have had. Mr Hutton drew the courts attention to various papers which suggested that on the issue of cognitive bias it appears that the community of forensic speech analysts in the UK have only begun to address this issue properly in more recent years.

[92] The fundamental issue identified by O'Hara J, namely the risk that their conclusions as to attribution may have been influenced by them having been given the view of the police, not just on what was said but also on who said it before they started their independent analysis is plainly present in this case. Mr Hutton argues that the evidence in this case points to an even stronger case for exclusion. By way of summary this evidence included the following:

(a) When initially instructed JPF were told that the portions of audio they would assess "will be in a closed set environment", for the reason that "we will have surveillance to put people into a house." Whilst this was true of a number of

other persons who were in the house it was not true of the defendant. JPF appear to have accepted their instructions on this basis.

(b) Throughout the entire process JPF were provided with transcripts in which the speakers were attributed against each individual segment of speech.

(c) Initial attribution work took place at Thames House, London, where DC McCarragher, one of the investigating officers, attended providing known audio samples and pointing the experts to "best extracts" from the questioned audio in relation to identified suspects together with apparent commentary on the crimes they were said to have committed.

(d) It appears that much of the initial analysis took place in the presence of police officers. This assertion is based on notes from the police officers involved in the initial stages. By way of example on 13 November 2014 DC McCarragher's note records that "an analysis performed by Prof French's team in my presence" and "Professor French confirmed positive comparison for both Sean O'Neill and Seamus Morgan." On 8 December 2014 DC McCarragher's note records "present whilst work conducted by Professor French and Dr Kirchubbel." Dr Kirchubbel refuted this in her evidence and suggested that the note is not accurate. She says that the officers were not actually present when the work was carried out and the notes are erroneous.

(e) It appears that initial analysis was conducted for the purposes of providing an "intelligence report." This did not involve the defendant Gleeson, but Mr Hutton suggests this indicates a very close and potentially problematic relationship between JPF and the police at any early stage in the investigation.

(f) Having carried out this "intelligence" assessment it was clearly anticipated that JPF would also be engaged for the purposes of providing an "evidential" assessment for the purposes of use in the criminal trial. As Mr Hutton puts it "the proprietary of the same analysts engaging in what were effectively arrest decisions and then providing prosecution evidence to support those arrests to conviction thereafter does not appear to have been considered by anyone involved. Rather it appears to have been the implicit plan that the analysts who provided a positive indication on the basis of the intelligence examinations would subsequently 'elevate' this work to an 'evidential standard.'" By way of example on 26 March 2015 DC McCarragher sought a meeting between Professor French and DI Hosking where the purpose of the meeting was "to fully clarify our best approach to evidence the volume of quality."

(g) Mr Hutton points to meetings between JPF and the PSNI in which quotations were sought for the "elevation" of the intelligence work to "evidential" work.

These requests were made only after positive intelligence reports were provided.

(h) In the following months Mr Hutton refers to communications between the police and JPF pressing for a timescale for the provision of reports which were the subject matter of judicial scrutiny particularly in the context of bail applications. JPF were advised that the police had "managed to fight off multiple bail applications" and warned of the prospect of the grant of bail if the timetable for completion of the JPF work slipped. JPF were advised that "given the seriousness of the charges and considered danger to the public from these individuals, our leadership are highly anxious of a potential granting of bail (most notably for ROI suspects with a significant risk of flight) and are concerned that all time frames are adhered to…"

(i) Mr Hutton is critical of the circumstances in which JPF sought further reference samples after the decision in *Corbett.* The "re–work" of the analysis was done in circumstances where they did not put their previous work and/or conclusions out of their mind. He characterises this as JPF raising the issue with the purpose of simply confirming their earlier conclusions and they were encouraged by the police to follow this course. No one involved appears to have seen any issue arising as to the propriety of this approach or as to the need for a fresh instruction to a fresh expert who would be able to have an open mind on the question of voice comparison.

(j) He is similarly critical of any rechecking that was carried out within JPF. The checking process undertaken is confirmed by the checked documents themselves bearing an annotation that the checker "agreed" with the findings or conclusion. It would appear that the checker was fully aware of the conclusion of the findings before signifying agreement. It was submitted that this fails to counteract the risk of cognitive bias. It did not involve a separate interpretation fully independently and without influence from the reporting scientist. It did not involve an assessment without knowing the outcome of the initial analysis or even the identity of the original examiner.

[93] Prior to O'Hara J's ruling in *Fitzsimmons & others* JPF answered the charge of confirmation bias raised by Hirson and Harris in their reports by saying that:

> "We do not see how the provision of the police transcripts containing police attribution raises 'the question of confirmation bias.'"

[94] Notwithstanding the subsequent clear ruling of O'Hara J, JPF strongly maintained no question of confirmation bias arose in this case.

[95] Dr Kirchubbel robustly defended her position at the hearing. As an expert she says that she was aware of the risks but applied her expertise robustly and

independently to the task she was asked to carry out. For her the key issue was recognising the risk and taking it into account in her work. She argued that she was asked to assess two competing hypotheses, namely that the speaker in the reference and questioned samples was the same speaker or not.

[96] In relation to specific criticisms JPF make it clear that they had not accepted that the analysis of Gleeson involved a closed set instruction. Indeed, there was a handwritten note to this effect.

[97] Having heard Dr Kirchubbel give evidence and being subject to cross-examination I have no doubt that she is convinced of the validity of her opinion and the methods used to reach that opinion. There is no question here of intentional misconduct or deliberate bias.

[98] Again the similarity between the circumstances of this case on this issue and the case of *Fitzsimmons & others* is obvious.

[99] The key determining factors which persuaded O'Hara J to exclude the attribution evidence in *Fitzsimmons & others* were the provision of a transcript to the experts with police attributions taken together with the meetings at which there were joint discussions (see para [83] of his judgment). Both factors apply in this case. As a result of the forensic examination by Mr Hutton of all the relevant notes and records I take the view that the link between the experts and the investigating authorities from the outset in this case was even greater than that established in the *Fitzsimmons* case.

[100] In that event, should the court come to the same conclusion as that of O'Hara J?

[101] Again, I bear in mind the test under Article 76 of PACE.

[102] The court must have regard to "all the circumstances." In this regard I bear in mind that fairness to the prosecution may require consideration of the entirety of its case. Because this case does not involve a jury the court is in the fortunate position of having heard the entirety of the prosecution evidence (subject to the minor caveat referred to above).

[103] Both the prosecution and defence directed the court to the totality of the evidence as being relevant in considering whether to exclude the JPF evidence. Mr Murphy agreed that the case against the defendant was a circumstantial one. In assessing such a case the court should have regard to all the strands of evidence relied upon and look at the prosecution evidence as a whole. Mr Murphy candidly accepts that the evidence of JPF on its own would be insufficient to sustain a conviction against the defendant. He refers to comments made by others at the meetings (who have pleaded guilty to offences arising from their presence at these meetings) to support the contention that the defendant was present at the relevant

meetings. Frequent references are made to "Darren." On one occasion there is a specific reference to "Darren Gleeson." He relies on photographs in a Facebook page which are referred to by the person designated as the defendant and which are referred to by him at the meeting on 3 October. They relate to a photograph of a Colt 45 and another photograph showing a person holding a Samurai sword and a handgun. He is linked to others who were present at the meeting and who pleaded guilty to offences, by analysis of call data from a mobile telephone linked to him.

[104] Mr Hutton argues that this evidence could never be sufficient to sustain a conviction. He points out that unlike the case of those who have pleaded guilty to offences arising from their presence at the meetings in Ardcarn Park there is no direct surveillance evidence available to the court identifying the defendant as having attended there, in particular video evidence. He suggests that the absence of such direct surveillance evidence has not been adequately explained. He is particularly critical of the failure to obtain footage from Newry train station on the relevant dates which could have confirmed whether the defendant had travelled from Dublin to Newry on the dates he is alleged to have been present in Ardcarn Park.

[105] In considering whether to exclude the material under Article 76 of the 1989 Order I consider that I should do so in the context of all the evidence I have heard in the case.

[106] The court has given very careful consideration as to whether it should adopt the same approach it has taken in respect of issue (iii). However, the court has concluded that it should adopt the same approach as O'Hara J did in the case of *Fitzsimmons & others*. The court has come to this conclusion for the following reasons:

(a) This issue has to be examined in the context of the admitted limits of forensic voice analysis. Those limitations also have to be considered in the context of the live issue concerning the validity of the acoustic and formant analysis applied in the circumstances of this case where BSE has been used as the comparator for a Dublin accent.

(b) The risks of cognitive bias in this case are real and obvious. There are risks of each of the categories of cognitive bias identified in 1.2.1 of the forensic science regulators guidance referred to earlier in this ruling namely, expectation bias, confirmation bias, anchoring effects, contextual bias and role effects. The risks primarily arise from the fact that the experts were provided with an annotated transcript in which the police had already attributed the identity of the defendant against the questioned recordings.

(c) The risk of cognitive bias arising from the annotated transcripts has been exacerbated in this case by the involvement of JPF from the outset in preparing "intelligence" reports and in the very obvious close relationship

with the investigating officers in this case. In short, they were far too close to the operation from the outset.

(d) Allied to this was a failure to take mitigation steps to ensure distance from the investigation and to protect the independence of their findings.

(e) The importance of ensuring that cognitive bias or the risk thereof is excluded from forensic analysis in a criminal case should not be doubted.

[107] Like O'Hara J in *Fitzsimmons & others* it is not for this court to set out a code or protocol in relation to how this type of evidence should be prepared and presented in criminal trials. I make it clear that the effect of this ruling is not that such evidence will always be inadmissible. It can and should have a role to play in criminal prosecutions, provided of course there is other evidence to support conclusions based on such analysis. As a minimum, the risk of cognitive bias must be excluded by ensuring that annotated transcripts are not provided to experts. Once instructed the experts must ensure an appropriate distance from the prosecuting authorities. Mitigating steps such as peer review and independent verification are important. It may well be that the cost and time in ensuring the elimination of cognitive bias and a robust system to ensure reliably independent evidence will be prohibitive. However, it is clear that the issue of cognitive bias needs to be addressed by prosecuting authorities and experts in the particular context of forensic voice comparison analysis.

[108] Whilst the court has come to its own conclusion it is noted that this ruling has the benefit of ensuring consistency of approach between this court and that of O'Hara J (the senior Crown Court Judge) in the case of *Fitzsimmons & others.*

Conclusion

[109] In relation to each of the issues raised by the defendant the court rules as follows:

(i) PACE interview recording

[110] The court rules that any evidence based on the use of the defendant's PACE interview recording should be excluded.

(ii) Prison telephone recordings

[111] Any evidence based on the use of prison telephone recordings relating to the defendant is admissible, subject to (iv) below.

***(iii) R v O'Doherty* [2002] NICA 20**

[112] The forensic voice comparison exercise carried out by J P French and Associates should not be excluded on the grounds of alleged non-compliance with *R v O'Doherty*.

(iv) Cognitive bias

[113] In so far as the evidence of J P French Associates based on voice comparison analysis relates to the attributions of extracts from the covert audio recordings to the defendant, Gleeson, that evidence shall be excluded.