APPEAL COURT, HIGH COURT OF JUSTICIARY

[2022] HCJAC 4
HCA/2018/17/XM

Lord Justice Clerk
Lord Menzies
Lord Brodie

OPINION OF THE COURT

delivered by LADY DORRIAN, the LORD JUSTICE CLERK

in

An Application

by

THE LORD ADVOCATE UNDER SECTION 4(3)(B) OF THE DOUBLE JEOPARDY (SCOTLAND) ACT 2011 SEEKING AUTHORITY TO BRING A NEW PROSECUTION IN THE HIGH COURT

Appellant

against

SEAN PATRICK TIFFNEY known as SEAN PATRICK FLYNN

Respondent

Appellant: S McCall QC; G Jones; Roy Harley & Co, Edinburgh
Respondent: A Prentice QC, Sol Adv, L Thomson; Crown Agent

9 January 2020

Background

[1] In 2005, at the High Court of Justiciary in Perth, the respondent stood trial for the murder of his mother Louise Tiffney and the crime of attempting to defeat the ends of justice. Louise Tiffney was last seen alive on 27 May 2002. At the time of the respondent's

trial in February and March 2005, Ms Tiffney's body had not been located. While her disappearance was initially treated as a missing person enquiry, it developed in to a murder enquiry. The Crown case against the respondent was based on circumstantial evidence. In March 2005 the jury returned, by a majority, a not proven verdict.

[2] In this application the Crown seek to set aside the acquittal and grant authority to bring a new prosecution against the respondent under section 4(3)(b) of the Double Jeopardy (Scotland) Act 2011, on the basis of new physical evidence, that was not available, and could not with the exercise of reasonable diligence have been made available, at the trial. This evidence relates to the finding of the remains of Ms Tiffney in East Lothian, and evidence relating to the comparison of soil samples from that location with samples recovered during the initial investigation from a vehicle used by the respondent.

Introduction

[3] On 2 April 2017 human skeletal remains were found by a member of the public at a wooded area at the side of the A198 Longniddry, East Lothian. Following dental and DNA analysis the remains were identified as those of Louise Tiffney. The cause of her death is unascertainable. At the time of recovery of the remains samples of soil and vegetation from the deposition site were taken. In the course of the original investigation debris from *inter alia* the front wheel arch of a Nissan Almera vehicle registered number N656 FSX ("the Nissan Almera"), to which the respondent had access, was removed in July 2002.

[4] The application asserts that a comparison of the samples taken from the deposition site with those taken from the vehicle, specifically with that from the front wheel arch of the vehicle (sample X295) has shown them to have *inter alia*, similar grain size, shape and elemental composition. The morphology, chemistry, mineralogy and organic profile of

sample X295 are said to show strong to very strong comparability with samples from the deposition site. Its n-alkane profile is said to provide extremely strong support for the proposition that it came from the site where the remains were located.

[5] It is averred that the additional evidence substantially strengthens the case against the respondent such that it meets the test for authorisation of a fresh prosecution, which would be in the public interest. First, the location of the remains is consistent with the CCTV and telephony evidence led at trial to suggest that the respondent had made two trips to East Lothian on the day of 28 May 2002, once in the early hours of the morning, and later in the mid to late morning. The Crown case was that the first trip was to dispose of the body, and the second was to see that it was not visible during daylight hours. Second, the scientific evidence establishes a link between the Nissan Almera and the deposition site. Third, the remains are not inconsistent with death having occurred in May 2002.

[6] This is contested for the respondent, who relies on scientific evidence that whilst it would be safe to conclude that the soil forming exhibit X295 could have been derived from the body recovery location, it is also possible that there may be other locations within East Lothian which would have a mineralogical and vegetation profile (and therefore organic markers) similar to that of the deposition site. It is also maintained that the scientific evidence advanced by the Crown does not provide a sound basis for the conclusions sought to be drawn therefrom.

Evidence at trial

[7] The Crown sought to attempt to establish that Ms Tiffney was dead by excluding all other possibilities. The case presented was based on circumstantial evidence.

[8] There is a joint minute between the parties agreeing a summary of the evidence given at trial. The following is a very brief summary of the key parts of the Crown's case at trial and the evidence relied upon.

(i) The respondent was the last person to see Ms Tiffney alive, on 27 May 2002. An argument took place between them late on 27 or early on 28 May 2002 following his return to the flat they shared. The respondent's position, repeated to numerous individuals, and to police, was that they had had an argument and his mother had left in a rage, around midnight and he had gone to bed. In the course of the morning of 28 May 2002 he called his mother's sister, and spoke to his grandmother's husband, saying his mother was missing and that she had left the house at midnight.

(ii) The respondent collected Ms Tiffney's sister and brought her to the house. She noticed that Ms Tiffney's bag, money, keys, benefits books, and cigarettes were in the kitchen. After inquiring of a number of friends, she called the police. Her mother also attended. Both were adamant that Ms Tiffney would not have left without her belongings, and in particular her cigarettes, being a heavy smoker.

(iii) As agreed by joint minute at trial extensive "proof of life" inquiries were carried out by the police. This included interviews with friends, family and associates; public appeals; searches and checks with various authorities, institutions and organisations including: the Benefits Agency, Inland Revenue, Passport Office, all UK Police Forces, the Scottish and UK DNA Databases, prisons across the UK, all UK NHS Trusts with accident and emergency or psychiatric units, various Financial Institutions, UK Housing Associations and women's refuges. These inquiries failed to show any trace of Ms Tiffney being alive after 27 May 2002.

(iv) Evidence suggested an escalating breakdown in the respondent's relationship with his mother including instances of his evincing malice and ill will towards her. The respondent's grandmother had spoken in evidence to a conversation with her daughter in which Ms Tiffney had said that the respondent had told her to "Get to fuck out of my life", to which she had replied "I can't be out of your life 'til I'm not breathing" to which he replied "that's a good idea". The respondent had also spoken of hating his mother using the terms "I hate her".

(v) Ms Tiffney's 5 year old daughter, Hannah, had been asleep before the respondent came home on 27 May and remained asleep until 9am on 28 May 2002. There was evidence that Ms Tiffney had been "a doting mother" to her daughter and would never have left her. Various family members, Ms Tiffney's current GP and Hannah's school teacher spoke to this, and to the close relationship between mother and daughter.

(vi) A neighbour from the flat immediately below Ms Tiffney, spoke of hearing, while watching Newsnight at around 11.25 pm on 27 May 2002, footsteps running across the living room above him towards the window, followed by a very loud, startling, female scream, which ended abruptly. He heard nothing else. Another neighbour, in the flat immediately above Ms Tiffney's, also heard a male and female arguing, then a scream, then heard nothing more. The scream was short but loud, and from a female adult.

(vii) The appellant had access to a white Nissan Almera vehicle, registration number N656 FSX belonging to his girlfriend. Only he and his girlfriend had a key to it. CCTV evidence cameras at Picardy Place and Wolseley Place, Edinburgh, both accurate for time and date, showed a vehicle heading East on Wolseley Place at 0120.

The vehicle was identified as a Nissan Almera manufactured between 1995 and 2000, with a roof spoiler, and what appeared to be spoked alloy wheels, consistent with the vehicle to which the appellant had access. A car with the same appearance was later seen heading West at Wolseley Place at 0231 and at Picardy Place at 0233. The defence position was that a vehicle could only make that journey if driven over the speed limit. The vehicle in each case appeared white, but certain other colours could have that appearance on black and white recordings. Testing using different colours of vehicle suggested that the car seen at 0120 could have been white, citrine or glacier blue; whereas the car at 0231 could only have been white. The police had traced owners of other white Nissan Almeras in Scotland, with the same attributes as the car in question, and asked their whereabouts at the times in question. This evidence was used by the Crown to suggest that other similar cars might be excluded.

(viii) Footage from the camera at Wolseley Place at 1146 showed an apparently identical vehicle heading East. This coincided with a period during which the appellant had left the house, as inquiries as to the whereabouts of Ms Tiffney progressed. He claimed he had gone to his work at the Corn Exchange in the West of Edinburgh at that time. However, telephone cell site evidence relating to calls definitely made to or from the appellant's phone showed that the signal from these calls was picked up by masts at Tranent, Jewel & Esk Valley College, Midroad Industrial estate, Prestonpans, and Lochend House, all between 1223 and 1236. The user of the phone was east of Lochend House during this period. This evidence contradicted the respondent's position that he was at his place of employment in the west of Edinburgh, checking if he had a shift that morning. The Crown theory advanced at trial was that the respondent had murdered his mother and disposed of

her body in the early hours of 28 May 2002, probably in East Lothian, and had returned to the site later that afternoon. It was suggested by a police witness that when someone disposes of a body in darkness they will return to see if the body is visible in daylight.

(ix) The respondent had shown an apparent lack of concern in the days and weeks that followed his mother's disappearance and, according to some witnesses, failed to participate in efforts to find her.

(x) The Nissan Almera used by the respondent, was seized on 14 June 2002 and found to have a quantity of blood on the carpet lining of the boot, the DNA profiling of which matched that of Ms Tiffney. The blood appeared diluted in parts. It did not appear to be very old. A dust sheet, in which a body could have been wrapped, was missing from Ms Tiffney's flat and was never recovered.

The defence position at trial

[9] Apart from the evidence above, there was also evidence that Ms Tiffney could be volatile, that she had a history of depression, for which she sometimes took medication, and she sometimes ran out of medication when doing so. Although she had £398.96 in her bank account, she was in debt for the sum of about £2,000 to her mother, £1,547 to a catalogue company and £1,177 to a finance company. This was not unusual for her, however: she had been made bankrupt in 1999. Without disputing that Ms Tiffney was very attached to Hannah, it was pointed out that the child's attendance at school was erratic. There was evidence that Ms Tiffney was upset over the rows with her son. The absence of a show of concern from the respondent was explained by his unemotional nature, about which witnesses gave evidence.

[10] It was submitted by the defence that it could not be established beyond reasonable doubt that a crime had been committed. Ms Tiffney was a volatile individual with a number of personal and financial difficulties, who may not be dead and could have simply left and changed her name. Even if the jury concluded that she was dead, they could not be satisfied (a) that she had been murdered; or (b) that the respondent had murdered her. Occasional rows between mother and son did not constitute a breakdown in their relationship, and there had been no ill will and malice against her. The evidence was weak. It was not for the respondent to explain the evidence relating to the blood in the boot, which could not be aged. No forensic evidence supporting the Crown's case was recovered from the respondent's clothing, the flat or the stairway. No blood stains were identified in the flat apart from a partial profile which was a mix of Ms Tiffney's and a male other than the respondent. No other supportive evidence was found in the Nissan Almera. Paint samples recovered from the boot of the Nissan Almera, which it was suggested could have been transferred by the missing dust sheet, did not match the control samples taken from Ms Tiffney's flat. There was in fact no reliable evidence that a dust sheet had in fact been removed. The jury could not be satisfied that it was the respondent's car in the CCTV, which might in any event not have been a white car. There had been no attempt to conceal Ms Tiffney's belongings, and neither of the neighbours who heard screaming had felt the need to call the police.

Evidence in this application

Professor Lorna Dawson

Introduction

[11] Professor Lorna Dawson is the head of the Soil Forensics section at the James Hutton Institute, Aberdeen where she is a principal research scientist. She holds the qualifications of BSc (hons) in geography from the University of Edinburgh and a PhD in Soil Science from the University of Aberdeen. She is a visiting professor in Forensic Science at the Robert Gordon University, Aberdeen, a Fellow of the British Society of Soil Science and a Chartered Scientist. She has published widely on the subject of forensic soil science and is an Expert Advisor to the National Crime Agency. In April 2017 Professor Dawson had been asked by Police Scotland *inter alia* to attend and sample soil and vegetation from the deposition site and carry out a comparison of it with the soil and plant material and debris recovered from the Nissan Almera in 2002. She concluded that the vegetation cover at the deposition site was broadly consistent with observations made in relation to botanical reports submitted to the police in 2002. The pollen assemblage found at the site now differed, reflecting not only the plants grown at the contact location habitat, but also the wider environment which is wind-blown (tree species from across the road for example). From aerial photographs she found the visible vegetation at the site to appear to reflect its composition in 2002, primarily sycamore and sea buckthorn, but with greater cover and in particular a spread northwards of sea buckthorn. The site is part of a strip of coastal scrub the soil of which belongs to what is known as the Fraserburgh Series, a brown calcareous soil derived from windblown shelly sands typically found on raised beaches. Fraserburgh Series soil type makes up only 0.5% of the land cover within a 10 mile radius of Edinburgh. Various maps showed the distribution broadly in the East Lothian area of the geology of the site; and the nature of the soil, including the areas of Fraserburgh Series soil. These did not exactly overlap so it was not possible to identify with clarity where the geology and soil characteristics matched; suffice it

to say that there were other areas within East Lothian of examples of Fraserburgh Series soil; and other areas of similar geology, particularly close to North Berwick and Dunbar, in respect of geology.

Some basic aspects of soil analysis

[12] Soil is a mixture of inorganic, organic and biological material. The inorganic represents the geological parent material, and certain man-induced particles. The organic represents plant derived components at various levels of decay, as well as man-induced organic material. The biological represents living organisms, plants and plant fragments. At the James Hutton Institute, the exercise of comparing a questioned sample of soil with a known sample starts with a visual comparison. The appearance of the physical macro and microscopic features, for example, texture and grain shape and size are examined to see whether they appear comparable. The samples are then analysed and their analytic features compared, both as to inorganic features and organic features. The inorganic analysis is done in two ways: SEM EDS and XRD. SEM refers to scanning electron microscopes which used electrons instead of light to form 3D images of the material observed. This is combined with EDS energy-dispersive X-ray spectroscopy which allows determination of the chemical elements present at the point of analysis. XRD refers to X-ray diffusion which is a method to test mineralogy. It is used to determine the structure of materials or identify materials based on known diffraction patterns of different materials. The organic analysis is done by GC – gas chromatography. This method separates and analyses the individual carbon chain compounds within the material. The n-alkanes - straight-chain, predominantly odd-chain carbon compounds of carbon and hydrogen, commonly known as hydrocarbons; and the fatty alcohols - straight-chain, predominantly even-chain carbon compounds, which contain carbon, hydrogen and oxygen, are those which have been found to discriminate for the

purpose of comparison, and so are the areas of focus of the GC analysis. The former are odd compounds C21-C35, the latter even compounds C20-30. The material in question was subjected to all these tests.

[13] Although Professor Dawson, as principal research scientist gave evidence about the findings of various test which were carried out, she did not herself conduct all the tests. The evidence reflects the work of a number of experts in different fields, referred to in a report dated 19 January 2018, lodged as a documentary production in the form of a composite report. Professor Dawson had sufficient knowledge of the various techniques in question to give evidence for the purpose of the application, although detailed interrogation of the exact interpretations would be a matter better addressed to the primary experts, in chemistry, geology, mineralogy or other disciplines.

[14] The samples from the Nissan included samples which were for these purposes labelled as follows:

-X251 Debris from wheel arch, steering and suspension, front o/s

-X255 Debris from wheel arch, steering and suspension, rear n/s

-X257 Debris from wheel arch & suspension, rear o/s

-X287 Debris from wheel arch, rear o/s

-X295 Debris from wheel arch, front n/s

-x297 Debris, front off side footwell

-X468 Sand from boot

-X617 Debris brushed off grill end.

[15] Soil samples from the body recovery site were labelled X904/1 - X904/6, representing markers 1 -6 placed within the vicinity of the body deposition, a wooded area off the A198. A control sample, X905 (occasionally referred to as X405) was taken from soil 15 metres east

of the entry to the deposition site. [From the written material (for example power points prepared by Professor Dawson) there were what appeared to be similar occasional errors in the description of samples; this was not clarified in evidence but we are satisfied from a comparison of these with the evidence of Professor Dawson that the samples should be given the references attached to them in this opinion].

[16] There is no universally accepted scale for use in assessing the level of similarity between compared soil samples. One recognised scale is that known as the Pye & Fitzpatrick scale. According to this scale, categories of comparability are classified according to the nature of the evidence, as follows:

Category of Comparability	Examples of type of evidence
None	Different in virtually all respects
Limited	Some general comparison in terms of soil morphology (colour, texture, and/or relatively common particles)
Moderate	General comparison in terms of soil morphology, especially in having a similar assemblage of relatively common particle types in common, some of which may have distinctive textural or chemical features
Moderately Strong	Fairly high degree of comparability in terms of soil morphology, as well as chemical, mineralogical and/or biological properties; including relatively unusual particle types in common
Strong to very strong	High degree of comparability in terms of soil morphology as well as chemical, mineralogical, and/or biological properties; including several relatively unusual particle types present
Extremely strong to conclusive	Physical fit (rocks) and very high degree of comparability in terms of soil morphology as well as chemical, mineralogical, and/or biological properties, including one or more very unusual particle types present

Some soil scientists consider that the examples of evidence test requires a degree of subjective assessment, and favour using an exclusionary scale, thus:

The possibility that the material originated from the same source is eliminated (excluded)
No conclusion can be reached. This can occur when there is insufficient material available or where there is mixing with other material or there has been a change
The possibility that the material originated from the same source cannot be eliminated. This conclusion is reached when the material cannot be differentiated from the exemplar using all observed or measured characteristics.
The materials were once part of the same broken object. This conclusion can only be reached when two or more parts physically fit together.

Analysis results

Visual examination

[17] The control samples were predominantly sandy. Most of the vehicle samples appeared to be a mixture of sources, but X295 from the front n/s wheel arch appeared to be predominantly a single source sample. A visual examination was enough to identify that X295 was an example of Fraserburgh Series soils, as were the control samples. One of the available soil databases confirmed the presence of Fraserburgh Series soil on the relative location of the deposition site. X295 could not be excluded as having a common origin with the control samples.

Inorganic Analysis

SEM EDS

SEM

[18] All deposition site samples had similar characteristics in terms of grain size, shape and chemical elements. The measurement was done visually with the aid of a scale in the eyepiece of the microscope. They are siliceous soils with variable amounts of organic

material. The sand grains range in size from approximately 70-580 microns. They are rich in quartz and the grains range in shape from sub-angular to sub-rounded. Certain of the questioned samples – X251; X255; X287; X617 – could be excluded as coming from the deposition site as a single source. The sand grains were generally more angular and smaller than those in the control samples. X468 consisted of clean sand with a uniform grain, the overall size range of which was more restricted than in the control samples, but the size range of 250-300 micron range were similar to the larger grains in the control samples, and the grains were similar in shape. X295 presented similarities with the control samples, being sandy with aggregates rich in organic matter within the finer-sized particles. The grains ranged from 100-500 microns and with sub-rounded to sub-angular shapes also being present.

[19] It is common practice at the James Hutton Institute to sieve material to remove particles which are >1mm, stones and other fragments which are stored separately. The tests are then done on the sieved material of <1mm. The reason is that otherwise the larger material would dominate. In Professor Dawson's view, these larger components of stone and road are not useful. They are very common and may be found in any exterior location in a car. She understood it to be general practice in soil science not to look at such fragments, making reference to an academic article to this effect. Such fragments were not helpful in analysis.

EDS

[20] The control samples divided into two groups on analysis: set (a) consisting of X/904/2-X/904/6; set (b), consisting of samples taken closer to the road, namely X904/1 and X905. Set (b) had slightly higher magnesium, calcium, iron and carbon than the remaining samples. The samples which could be excluded by SEM as coming from the deposition site

as a single source also had a different EDS chemical profile from those of the control samples. EDS analysis of X468 showed a spectrum similar to that in sample set (a) but with lower calcium and additional sodium and chlorine. Analysis of X295 showed a spectrum with close similarities to the profile found in sample set (a) with some additional sulphur. This could be accounted for, in Professor Dawson's view, by the 15 years which separated the taking of the samples. It is within a variation which might be expected over time. The additional sulphur is "neither here nor there".

[21] The conclusion from these sets of analysis was that based on SEM EDS characteristics neither sample X295 nor sample X468 could be excluded as coming from the general vicinity of the deposition site. The 19 January 2018 report stated that in fact sample X295 showed strong similarity to sample set (a) but with additional sulphur as noted above. The remaining samples could be excluded as coming, at least as a single source sample, from that site.

Mineralogy

XRD

[22] Four samples were analysed for mineralogy: X295; X468; X287(rear o/s wheel arch) and X904/3. Samples X904/3 and X295 were found to be similar in mineralogy, although there was a trace of calcite in sample X295 and slightly more feldspar than in the control sample. This was the result of tests carried out by Professor Hillier, soil mineralogist. His view, based on his experience, was that the minerals were similar in both composition and proportion. Calcite is calcium carbonate, a mineral common in shelly sand, feldspar is aluminium silicate found in granite and used as a road surfacing material which means it cannot be used definitively for comparison purposes. The general suite of minerals in any given area will be similar over a spread of kilometres. This mixture is representative of

Fraserburgh Series soil. There will be ancillary fine trace minerals which will vary across an area such as calcite and dolomite. These differences may be such that one can say, for example because of the different proportions of calcite or dolomite, that the soil came from a different area of Fraserburgh Series soil. The conclusion was that sample X295 could have originated in large part from the same location as test sample X904/3.

[23] X468 also had similarities in terms of minerals present, but the background of the XRD trace was quite different, reflecting different organics in the sample. Thus, despite the visual and SEM EDS similarities with the control samples, X468 could be excluded as coming, as a single source, from the body recovery site. X287 had a much higher feldspar content and also contained pyroxene suggesting a basaltic parent material, including road stone which is often quarried from such rock. It too could be excluded as coming, as a single source, from the body recovery site.

Organic Analysis

GC

n-Alkanes

[24] The n-alkane profiles of X295 and X468 were similar to the profiles of control samples X904/2-6. X295 was very similar in n-alkane characteristic to the control samples, having a very strong C29 dominance, which reflected the sea buckthorn and sycamore profile, both species common at the deposition site. The pattern of distribution was represented in a chart. The association of say, sea buckthorn with sycamore, will produce a different pattern from, for example, sycamore with grasses. Sea buckthorn and sycamore may be relatively common. However, different habitats and different locations with the same general species but subject to differing uses or climactic conditions will result in a different profile, as the rate of breakdown of alkane compounds will be different.

[25] The analysis did not allow quantification of exactly how much of the profile represented sea buckthorn or sycamore. However, it was possible to identify what proportion of either of these was present relative to the other, and this was reproduced to show the pattern of occurrence as a representative proportion. The comparison looks at the pattern in terms of dominance and concentrations as a relative percentage of the whole. The similarity was most marked between marker 5 - X904/5 - and X295, which were very similar. The characteristics of all the other queried samples tested were different.

Fatty Alcohols

[26] The alcohol profile in X295 was similar to the alcohol profiles of control samples X904/2-6, with the similarity between X295 and X904/5 and X904/6 being very similar. X468, whilst similar in n-alkane profile, had different contributions from two of the alcohol compounds tested for, C20 and C28. Characteristics of all other samples were different. Again, the pattern of distribution was presented in graphic form, reflecting dominance and concentrations relative to each other and as a percentage of the whole.

Statistical ratios

[27] This was an exercise carried out by a statistician, Dr Mark Brewer, using the results of the organic analysis. The intention was to compare information available from certain data sets with X295, specifically focusing on C29, and in an effort to obtain a ratio of the likelihood of that coming from the deposition site as opposed to another site within a 20km distance. The data sets used were (a) the control samples; (b) samples used in Operation Columbus (used in *HM Advocate* v *Sinclair No 2* 2014 SCCR 554*)* and taken from the Gosford beach/Longniddry area; and (c) a national database. The analysis suggested that on the basis of the n-alkanes the three data sets in question can be distinguished from one another. This suggested that X295 was more closely associated with the deposition site than other

samples in the data sets, whereas X468 was more closely associated with the Operation Columbus samples than any other data set. Using alkane C29 as the basis for the statistical approach produced "extremely strong support" for the hypothesis that X295 came from the deposition site data set than from one of the others.

Dr Duncan Pirrie

[28] Dr Pirrie is principal consultant geologist for Helford Geoscience LLP. He holds both a BSc and a PhD in geology and has been employed as a professional geologist since 1985. He is a Fellow of the Geological Society of London. He is Associate Professor within the School of Applied Science at the University of South Wales, teaching in the Geology and Forensic science degree programmes. He is a member of the academic research team of the Home Office Centre for Applied Science and Technology. He has published widely on geological matters. He knows Professor Dawson and has co-authored publications with her. He did not think it was correct to say there was a universal approach that material should be sieved at 1mm: some laboratories did so, some did not. He would not. The result of the sieving is that only the finer grain samples have been tested; the coarser ones have not, and we do not know what they might have established.

[29] Three reports were ultimately prepared by Dr Pirrie, documenting his views on Professor Dawson's reports, what further information or clarification was needed to enable him to address the questions asked of him, the results of a review of the samples in question and his own analysis thereof. The first report containing his initial views was dated 10 May 2019. In it he concluded that

> "whilst the methods used are generally appropriate, the grain size/shape, elemental composition and mineralogy have not been thoroughly quantified and/or reported. The apparent similarity between the critical samples based on these parameters has not therefore been adequately tested, hence limited significance can be placed on the parameters."

The estimation of grain size alone was of limited value. He sought further information so that he could evaluate these matters. He was concerned that the mineralogist, Professor Hillier, had not provided with his report an "interpreted trace" or audit trail of his conclusions.

[30] In his final report, dated 6 September 2019, and in his evidence, he repeated that the data presented in Professor Dawson's report as to grain size/shape, elemental composition and mineralogy was not quantified and so was of "limited value in testing the proposition that the soil forming exhibit X295 …….could have been derived from the body recovery location". However, Dr Pirrie himself carried out a quantitative analysis of the mineralogy. He noted that X295 and X904/3, 5 and 6 "are comparable with each other in terms of the mineral types present, the mineral textures, and also the relative abundance of the minerals present". X295 and X904/3 "show a very strong mineralogical comparison with each other based on both the major/minor and trace minerals present". He concluded that this analysis does

> "demonstrate that there is a strong quantitative correspondence between the soil sample analysed from the motor vehicle and the soils present at the body recovery location."

[31] Of the samples analysed by him, "the strongest similarity is between the soil samples recovered from the vehicle [ie X295] and sample X904/3". However, he also identified that X295 was "broadly similar" with a sample which he had collected 1 km North of the deposition site. The difference lay in the proportion of calcite and dolomite. The calcite could come from a shell which might have been sieved out.

[32] In para 6.3 of his first report he stated that "there is an apparent extremely strong similarity based on the available *n*-alkane data." He observes that these, however, are a

function of the vegetation at the locus, and there was no consideration within Professor Dawson's reports of how many locations within the East Lothian area would give a similar n-alkane profile. It was known that in 2002 the vehicle was stored outside in an area where there were sycamore trees. It was possible that viable fragments of sycamore could have been transferred to the vehicle depending on how it was moved after it was seized. He considered further work was required to "assess the evidential significance of the reported similarity". It was not known what proportion of the C29 dominance was related to sea buckthorn or to sycamore or to both in combination. To know how strongly this result represents a given site, one would need to know how much the C29 result varied across sites with the same vegetation. He noted that Professor Dawson had suggested that the organic markers were site specific. He recommended that additional control samples be collected at Longniddry so that the variation in organic markers could be tested.

[33] He questioned the value of the statistical ratio evidence in Professor Dawson's report in the absence of evidence showing how variable the n-alkane dominance is across sites with broadly the same vegetation. The comparison was of much more value. He considered that "it would be safe to conclude that the soil present forming exhibit X295 **could** have been derived from the body recovery location" (the emphasis is his). However, it was also possible that there may be other locations within East Lothian which would have a similar mineralogical and vegetation profile as the deposition site.

[34] His ultimate conclusion was:

> "The modern soil forensic analysis has demonstrated a strong similarity between one sample recovered from the vehicle [ie X295] and samples from the body deposition site."

[35] In relation to the samples where the similarity was closest, these were taken closest to the deposition site, not closest to the road. Based on the 2019 vegetation around the

deposition site the witness did not think he could have driven a vehicle close to the site. He doubted whether it could have been done in 2002. A car would have had to crash through the vegetation.

Submissions by the Crown in this application

[36] It is submitted that the new evidence adds strength and substance to the case against the respondent. It is consistent with and supplements the incriminatory evidence relied upon and advanced at the original trial. The location of the remains is consistent with the CCTV and telephone evidence led at the original trial. The scientific analysis of the debris and the samples taken from the deposition site link the Nissan Almera car used by the respondent to the location of the remains of Ms Tiffney. The condition of the skeletal remains is not inconsistent with death having occurred in May 2002. It is capable of supporting an argument that a jury should not have any reasonable doubts in relation to the reliability and significance of the CCTV and telephony evidence at trial. It is capable of being interpreted by a jury as establishing a strong link between the motor vehicle used by the respondent and the location where Ms Tiffney's remains were found. It enables a jury to conclude that Ms Tiffney is dead.

[37] While Dr Pirrie was critical of some aspects of Professor's Dawson's report, he does not suggest the conclusions are scientifically invalid. He says more sampling might have given a more complete picture. However, the jury would be entitled to make the comparison in the context of the whole case, and when one combines the evidence at trial with the new evidence, including the scientific evidence, the Crown case is substantially strengthened. At trial there was a line challenging the fact of death and that is now

absolutely plugged. The crime is the most serious one. It would be in the interests of justice that the application be granted.

Submissions for the respondent in this application

[38] It was accepted that there is new evidence which was not available, and could not with the exercise of reasonable diligence have been made available, at the trial. However, it was not accepted that the remaining elements of the test were met. It is not enough to say that X295 could have come from the deposition site, as one proposition amongst other propositions. The court has to assess the evidential and persuasive effect of the evidence, which is weak.

[39] It is not admitted that the skeletal remains were in a condition consistent with death having occurred in 2002, and the Crown has led no evidence in support of that averment. The Crown has led no evidence to support the proposition that what was discovered in 2017 was a body deposition site as opposed to a remains deposition site, although the former is recognised as a possibility. It was accepted that there was hearsay evidence that what were found were bones, and it was conceded that this was not consistent with a recent death. The evidence before the court does not establish either that she was dead in 2002 or that she was murdered.

[40] The Crown rely on the original CCTV evidence led at trial, but it is not the case that there was evidence that it was the same car seen in all the images. Since the trial, additional CCTV footage, referred to in a further joint minute, had been discovered showing a vehicle similar to that seen in the Wolseley Place footage travelling East through Portobello High Street on 28 May 2002 at 02.35.46 hours according to its time stamp. That had the potential to undermine the CCTV evidence led at the trial. The telephony evidence was limited, and

no evidence was led from the respondent's fellow employees to contradict his evidence that he was at work in the West of Edinburgh at the time of the calls in question. The cell site evidence does not place the respondent's phone at the site of the remains nor does it have him travelling in any particular direction. On the evidence he may not have been moving at all.

[41] The Crown state the matter too highly in submitting that the scientific evidence establishes a link between the car and the deposition site. The evidence establishes only that one cannot exclude X295 and certain samples from the deposition site as having a common source. There could be other sites in East Lothian with a similar composition. This is significant because there was evidence at trial of the respondent driving to North Berwick, where it is known that there is Fraserburgh Series soil. It is not enough to add an adminicle of evidence: the court must be satisfied that the evidence substantially strengthens the Crown case and that a jury knowing of it would have been likely to convict.

[42] There were practicalities also: how might the sample have been picked up by the vehicle? Dr Pirrie doubted it would have been possible to drive to the site.

Analysis and decision

[43] The court is only entitled to set aside an acquittal on the basis of new evidence which was not available and could not reasonably have been made available at the trial where the test in section 4(7) of the Double Jeopardy (Scotland) Act 2011 has been met, namely, where the court is satisfied that:

> (a) the case against the person is strengthened substantially by the new evidence,
>
> ….

(c) on the new evidence and the evidence which was led at that trial, it is highly likely that a reasonable jury properly instructed would have convicted the person of—

(i) the original offence, or

(ii) a relevant offence, and

(d) it is in the interests of justice to do so.

For these purposes, the "case" means "the evidence led at the original trial against the respondent" (*HM Advocate* v *Coulter* 2017 JC 115 at paras 37 & 40). It "involves consideration only of the evidence led at the original trial, and the legitimate inferences which may be drawn from it." (*HM Advocate* v *Sinclair No 2* 2015 JC 137 at para 99).

[44] A case is "substantially strengthened" in terms of section 4(7)(a) where the new evidence has more than a trivial or marginal effect on its strength. Its strengthening effect must be more than *de minimis*, it must add weight or substance to the case against the individual. In considering the strengthening effect of evidence the court may look at the apparent defects in the original trial, for example in *HMA* v *Coulter* the absence of evidence placing a weapon in the hands of any of the respondents, or in *Sinclair No 2* the absence of a link between the ligature and the respondent. When considering section 4(7)(c) in particular, "The court requires to have regard to what it considers to be the evidential and potentially persuasive effect of the new evidence in combination with the evidence led at trial" (*Sinclair No 2*, para 99). Assessment of the likely effect of the evidence on a jury "must involve considerations of the evidential and persuasive effect of the evidence" (*Sinclair No 2*, para 102).

[45] As to the interests of justice, the Act does not narrate the factors the court requires to take in to consideration, but such factors could include:

- the fact of the acquittal;

- the effect of publicity;

- the importance of the rule against double jeopardy;

- the importance of finality;

- the stress which might be caused to an accused, to witnesses, to victims or their families;

- the seriousness of the crime(s);

- the nature and strengthening effect of the new evidence. "The more certain the new proof, the more it will be in the interests of justice to re-indict" (*Coulter*, para 47);

- the passage of time and any prejudice which may flow from it, including the extent to which the original evidence is relatively intact;

- the conduct of the Crown, both at the time of the original trial and since.

[46] Rule 59.4(9) of the Act of Adjournal (Criminal Procedure Rules) 1996 provides that when hearing evidence in an application of this type the court should do so in accordance with existing law and practice. However, the court is not required to hear evidence at all and can even remit to a fit person to enquire and report on the matter. When it does hear evidence it is not necessary to adhere rigidly to the rules of evidence: the real questions are whether the evidence exists and whether it can be laid before the jury in a competent fashion. Questions of admissibility are for the trial court. The court hearing the application is entitled to proceed on the basis that at any retrial the Crown will be able to establish matters for which only hearsay evidence is provided at the hearing on the application.

Does the new evidence substantially strengthen the case against the respondent?

The location and condition of the remains

[47] On this matter it is relevant to look at what were the weaknesses in the Crown case at trial. The most significant weakness by far related to the question whether Louise Tiffney was dead. A considerable portion of the defence speech was devoted to suggesting that the jury should not be quick to jump to the conclusion that she was dead. Emphasis was placed on evidence suggesting that she was troubled, volatile, extravagant, impulsive and needy. She was heavily in debt and she had numerous family and other problems. This evidence was assembled to suggest that the jury could not be satisfied beyond reasonable doubt that she had not simply turned her back on all her troubles. Reference was made to some evidence that she had on a prior occasion changed her name, which could explain why the proof of life evidence returned blank. Furthermore, there was no evidence that she had been murdered. She had mental health problems, she was on antibiotics, was volatile, and although a note in her medical records had recorded "not suicidal", that at least indicated a sufficient concern about her mental health for the issue to be raised. The jury could not be satisfied that she was dead, or even if she were, that she had not committed suicide. It was not for the respondent to explain a spot of blood in his car, which could not be aged and as to which there was no evidence about what might have caused it. There was no incriminating evidence in the house, the stairway or the respondent's clothing. The CCTV evidence was vague as to the car in question with nothing unique to suggest that it was the car used by the respondent; and the telephony evidence was not scientifically exact and could not be relied upon.

[48] The finding of the remains of the deceased in a location consistent with both the suggestion that the CCTV evidence showed the respondent driving towards and back from

East Lothian immediately after his mother was last seen, and the telephony evidence which would be consistent with his being in an easterly location later in the day, when the second CCTV evidence was seen, is evidence which in our view can only substantially strengthen the Crown case. The telephony evidence may not enable the respondent's location to be pin-pointed, but it is consistent with the case against him advanced by the Crown. It shows that he was at least east of Lochend at the time when he maintains that he was in the far west of the city. It weakens the arguments advanced for the defence, and strengthens the circumstantial case advanced by the Crown. It plugs the gap created in the original trial by the absence of conclusive proof of death. Moreover, the location of the body is also capable of giving rise to the inference that suicide was not likely. We do not think that the additional CCTV evidence relating to a car in Portobello on the morning in question is of materiality, particularly since the accuracy of the time stamp on the camera cannot be verified.

The soil site analysis

[49] The criticisms which Dr Pirrie advanced against the evidence offered by Professor Dawson related substantially to two points: first, that the evidence as to grain size/shape, elemental composition and mineralogy was not quantified, and was thus of limited value in establishing a link between X295 and the deposition site; and second that as to the n-alkane profiles, other sites with a similar composition might exist elsewhere in East Lothian. We do not consider that these two factors mean that the evidence is not capable of substantially strengthening the Crown case, even before we consider the fact that Dr Pirrie's own quantitative analysis led to a similar conclusion.

[50] There were two weaknesses in Dr Pirrie's approach. The first was tendency to examine aspects of Professor Dawson's evidence in isolation from each other, rather than to

look at the evidence as a whole. We return to this in the next section, but for present purposes it is enough to say that what we must do is look at the evidence presented by Professor Dawson as a whole, and ask whether, working through the various tests carried out, it leads to a strengthening of the Crown case. The second weakness in Dr Pirrie's evidence, from the forensic point of view, was that not surprisingly, he was assessing that evidence as a scientist, rather than as a jury might assess it. Thus he reached the conclusion that whilst the qualitative evidence presented in the report was consistent with X295 coming from the deposition site, it was "not fully scientifically demonstrated". His complaint was not that the approach taken by Professor Dawson and her colleagues was invalid; nor that no conclusion could be reached on their approach; rather it was that scientific proof could not be established from such an approach. However, it is in the nature of this evidence that the opinion and expertise of the expert will be relevant, approaching the matter from the point of view of legal, rather than scientific proof. To cite but one example: Dr Pirrie expressed concern that he had not been supplied with a documentary interpretive trace to vouch Professor Hillier's conclusions. However, when the evidence that Professor Hillier had based his conclusions on his own experience and expertise of looking at the trace, and had reached the conclusion from a visual examination was put to him, he accepted that Professor Hillier probably had the expertise to do this. It would be a matter for the jury whether they accepted the Professor's evidence about this. The same applies to the findings of the other experts, and their decision to use the Pye & Fitzgerald scale, rather than the exclusionary one. Dr Pirrie prefers to use the latter but it is not suggested that use of the former is an unacceptable approach to take. In any event, even on the qualitative material, Dr Pirrie accepted that the possibility could not be eliminated that X295 came from the same source as certain samples from the deposition site. On the exclusionary scale such a

conclusion is reached when the material cannot be differentiated from the exemplar using all observed or measured characteristics. The only higher category in the exclusionary scale is that the materials were once part of the same broken object. This conclusion can only be reached when two or more parts physically fit together.

[51] We have not included in this assessment so far the statistical ratio evidence. However, as we understood Professor Dawson's evidence, it is important to note that this is not an exercise in comparison of the kind carried out by the other experts involved. Rather it is an exercise of examining alternative hypotheses using the selected data sets. The question is thus could the sample have come from an alternative location within the data sets selected or is it more likely to have come from the recovery site. The conclusion that there was "extremely strong" support that X295 came from the deposition site must be placed in this context, in which it may mean that it is, on its own, of a more limited significance than the wording of the conclusion might suggest to the uninformed. The results of the exercise may of course be limited by the nature of the data sets selected, but we are unable to say that the evidence has no value, especially when taken alongside the scientific analyses carried out.

[52] We are satisfied therefore that the statistical evidence also strengthens the Crown case.

The condition of the remains

[53] At first blush, it might seem somewhat strange that the Crown did not lead any evidence before us as to the finding of the remains, the condition in which they were found, and how they were distributed relative to the vegetation. In a submission in answer to those for counsel for the respondent the advocate depute submitted that bearing in mind the nature of the hearing the court is seized of all the material lodged, including productions,

but he did not draw our attention to any specific material, save a defence production which we were not inclined to consider, having regard, amongst other things, to the fact that a decision not to lead the witness in question had been taken after discussion with the advocate depute. However, it should be noted that the Crown's averment as to the condition of the remains is in fact rather limited. It is that the condition is "not inconsistent" with death having occurred in May 2002. Notwithstanding the submission made by Ms McColl we did not understand her to dispute that this was a possible inference which the evidence might bear. No doubt there are others. It is admitted in the Answers that what were found were "skeletal remains" which is consistent with hearsay evidence that what were found were bones. Overall, we are satisfied that the inference that the remains were in a condition not inconsistent with death having occurred in 2002 is one which the Crown could legitimately advance at trial, even on the limited evidence which we have examined. Taken with the proof of life evidence, it enables the Crown to suggest that Louise Tiffney was dead all along, a possibility which counsel accepted arose on the evidence. This too substantially strengthens the Crown case.

On the new evidence and the evidence led at the original trial, is it highly likely that a reasonable jury properly instructed would have convicted the respondent of the original offence?

[54] Although we have examined separately the three strands of evidence relied upon by the Crown as substantially strengthening the case, it must be borne in mind that the Crown case is a circumstantial one, and should not be assessed by reference only to the significance or strength of isolated bits of evidence. No piece of the evidence led at the original trial should be examined in isolation, nor should the evidence of the finding of the remains, the inferences which might be drawn from their condition, or the soil science evidence. It is the

cumulative effect of the evidence – the row, the screams, the fact that the respondent was the last person known to see the deceased, the blood, the CCTV, the telephony, both of the latter being consistent with making a journey to East Lothian, and the finding of the remains in the location and condition shown by the evidence, together with the scientific evidence which must be considered as a whole. The real question is whether all this evidence together would not only entitle but would be likely to lead a jury to draw adverse inferences such as to justify convicting the respondent.

[55] We have referred to the tendency of Dr Pirrie's evidence to examine aspects of Professor Dawson's evidence in isolation from each other, rather than to look at the evidence as a whole. The court on the other hand, must look at that evidence as a whole, and address the question whether the evidence, taking the combination of visual analysis, SEM, EDS, XRD, and GC, both in relation to n-alkanes and fatty alcohols, builds up a persuasive and compelling picture. Moreover, it must do so not by examination of that evidence alone, but by an examination of that evidence as it might be seen in the context of the evidence led at trial, and the significance of the finding of the body at the location in question. The context in which the court must look at it now also includes the evidence from Dr Pirrie as to the results of his own quantitative analysis, which on his own conclusion demonstrates a strong quantitative correspondence between X295 and soil from the deposition site. It is the cumulative effect of this evidence, taken with the evidence to which we have made reference in the previous paragraph, which must be considered. Having done so, we consider that the combination of evidence presents a compelling and persuasive case against the respondent such that a properly instructed jury, considering it all together, would have been likely to convict of the original offence.

Is it in the interests of justice to grant the application?

[56] We have noted above the factors which may be relevant to this point. The crime is of a most serious kind, and it is clearly in the public interest that such crimes be prosecuted. The new evidence is considerably strengthening of the Crown case, and from a persuasive point of view enables the Crown to present a highly compelling case. Three witnesses who gave evidence at the original trial have since died, one suffers from ill-health and would be unlikely to be able to testify and one cannot be traced. There is no basis to consider any prejudice arises from these facts, given the availability of statements and the like. Of those witnesses not called at trial, 13 are dead and 7 untraced. Again, we do not consider that the absence of those witnesses would be significant or would prejudice the respondent. The real evidence from the original trial is relatively intact, with the majority of productions and labels still being available. There is no suggestion that the absence of any productions creates any prejudice to the respondent, and looking at the list we do not see where any such prejudice might arise. We have examined the list of labels which are no longer in existence and we do not consider that any risk of prejudice to the accused arises from this, or that by virtue of their absence it would not be in the interests of justice to set aside the acquittal and grant authority for a new trial. Accordingly we are satisfied that the test in section 4(7) has been met and we shall grant the application.