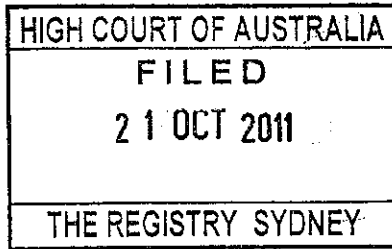


BETWEEN:



YUSUF AYTUGRUL

Appellant

AND

THE QUEEN

Respondent

10

**RESPONDENT'S SUBMISSIONS**

**Part I: Publication**

This submission is in a form suitable for publication on the internet.

**Part II: Concise statement of issues**

Whether the presentation of the random match probability ratio of 1 in 1600 in the form  
20 of a percentage exclusion of 99.9% was so misleading or confusing or unfairly  
prejudicial in all the circumstances of this case as to warrant exclusion under ss 135 and  
137 of the Evidence Act.

**Part III: Section 78B of the Judiciary Act**

This appeal does not raise any constitutional question. The respondent has considered  
whether any notice should be given in compliance with s78B of the *Judiciary Act 1903*  
(Cth). No such notice is required.

**Part IV: Statement of contested material facts**

- 30 4.1 Sevda Bayrak's body was found on 27 November 2005. She had been stabbed  
34 times.
- 4.2 Ms Bayrak was last heard from at about 8pm the day before when she arranged  
to collect her daughter from her sister's place. When she did not arrive and did

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not answer her phone, her sister alerted police who eventually entered her flat and found her body on the floor near the front door. There were no signs of robbery.

4. 3 The most likely suspects were Ms Bayrak's current boyfriend, Erdal Tunc, and her ex-boyfriend, the appellant.
4. 4 Mr Tunc had been with the deceased at about 8 pm that night. His DNA was found on a sample taken from under her chin. Mr Tunc was married to Ms Bayrak's best friend. He gave evidence that he was in a relationship with Ms Bayrak and admitted being with her at the flat earlier that night.
- 10 4. 5 Ms Bayrak had moved into the flat about 4 weeks earlier. The appellant said he had never been there.
4. 6 A hair was found on the deceased's finger tip. A DNA profile was extracted from the hair and the probability of a random match of that profile with the appellant's DNA was estimated to be in the range of 1 in 1000 to 1 in 2000. The random match probability with a person within the Turkish population was found to be about 1 in 50.
4. 7 The probability ratio was also expressed as a percentage exclusion ratio, namely, that 99.9% of the general population could not have this profile. It is that percentage expression which is the subject of this appeal.

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#### **PART V: Applicable Legislative provisions**

The respondent agrees with the appellant's list of legislative provisions.

#### **PART VI: Statement of Argument**

6. 1 High random match probability ratios of the order of 1 in 90 billion, as in *R v Karger*<sup>1</sup>, convey the impression that the DNA profile is virtually unique and must be a match with that of the accused. The numbers may be so "impressively persuasive"<sup>2</sup> in themselves that they sway the jury into giving the match ratio

<sup>1</sup> *R v Karger* (2002) 83 SASR 135.

<sup>2</sup> *R v Karger* (2002) 83 SASR 135 at [30] per Doyle CJ.

undue weight with the risk that the jury may surrender the evaluative task to the seemingly overwhelming impact of the computation.

- 10 6.2 Without proper explanation random match probability ratios may appear to signify the likelihood that the accused was the source of the DNA. For example, a random match probability ratio of 1 in 90 billion is likely to be understood to mean that there is a 90 billion to 1 chance that the profile matches the accused. However, even a random match probability of 1 in 1 trillion does not signify that the likelihood of finding another person with the same profile is effectively impossible, for the probability that others share such a profile can be calculated to be about 1 in 182.<sup>3</sup>
- 20 6.3 In this specialised field of knowledge it may often be necessary that some explanation of the nature of the statistical analysis be provided for it may not be readily understood that it is based on a number of assumptions and is for that reason essentially hypothetical and conditional. Such random match probability ratios represent an estimation of the expectation of finding a match from a single randomly selected person, they do not signify the likelihood that the profile came from the accused. As Doyle CJ expressed it in *Karger*, the statistical evidence involves “a prediction about a future hypothetical event, and that it speaks about a class of events or persons, and not any one event or person in the class.”<sup>4</sup>
- 6.4 There are a number of alternative ways in which statistical ratios may be expressed and, not uncommonly, more than one formulation is used to express the same ratio. Where that occurs it may be helpful to explain some of the assumptions behind the statistical analysis and to avoid formulations which invite fallacious reasoning or possible misunderstanding. For example, the ratios in *GK* were expressed in three forms; the paternity index was given as 147,000 to 1, the chance that the complainant would produce a child with the particular genetic pattern was said to be 500 million times more likely with GK

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<sup>3</sup> JJ Koehler “On conveying the Probative Value of DNA Evidence: Frequencies, Likelihood Ratios, and Error Rates” (1996) 67 University of Colorado Law Review 859 at 862.

<sup>4</sup> *R v Karger* (2002) 83 SASR 135 at [26] per Doyle CJ.

as the father than another person at random, and the paternity index was expressed as a percentage of 99.9993%.<sup>5</sup>

6.5 In *GK* it was held that the percentage quantification of the relative chance of paternity of 99.9993% should have been excluded because it was “so extraordinarily close to 100 per cent” that there was a real risk that the jury would unquestioningly conclude that GK was the father<sup>6</sup> however the other formulations were admissible.

6.6 It is well accepted that, in cases where the mathematical computations are “stark”, and the evidence counterbalancing the numbers is limited<sup>7</sup>, juries may need to be instructed about the qualifications and limitations of the statistical evidence, and in some cases, particular formulations may be excluded to avoid the risk of unfair prejudice. Some principles concerning the presentation of DNA evidence were propounded in *R v Doheny and Adams* [1997] 1 Cr App R 369.

6.7 The appellant’s submission that the 99.9% exclusion ratio in the present case should have been excluded appears to transpose the acknowledged concerns about the risk of unquestioning acceptance of high random match probability ratios into a blanket prohibition on percentage quantifications. In *GK* it was sought to exclude all the statistical evidence. In the event, the paternity index figures were held to be admissible but the percentage quantification was excluded because the “bare”<sup>8</sup> percentage figures might lead the jury to believe that there was “no possibility” that GK was not the father. That was understandable where the ratios were of the order of 500 million to 1 and the three different formulations, each extremely high, may well have had a cumulative effect. Further, the expression of the percentage as a “relative chance of paternity” tended to suggest that the figure represented the actual likelihood that the accused was the father.

6.8 The risk that very high ratios may exert undue influence arises not from the fact that the figures are expressed as percentages but because such overwhelmingly high numbers have considerable impact in themselves. Such figures may

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<sup>5</sup> *R v GK* (2001) 53 NSWLR 317 at 341 [18].

<sup>6</sup> *R v GK* (2001) 53 NSWLR 317 at 341 [99].

<sup>7</sup> *R v JCG* (2001) 127 A Crim R 493 at [55].

<sup>8</sup> *R v GK* (2001) 53 NSWLR 317 at 341 [99].

convey, without some explanation, an exactness and certainty that that statistical analysis, properly understood, cannot justify. The authorities have recognised that the “very precision and concreteness” of such statistical evidence “suggests an exactness which a statistical distribution does not have. There will be circumstances in which this may mislead the jury and lead it to give the evidence greater weight than it ought to be given.”<sup>9</sup>

6. 9 The potentially misleading effect of such high ratios was noted in *Doheny and Adams*, where it was considered that there was a danger that, without rigorous analysis, a random match probability ratio of 1 in a million may be translated into a million to 1 probability that the accused left the DNA at the crime scene.<sup>10</sup>
- 10
6. 10 Phillips LJ pointed out that such a probability ratio indicated that there might be perhaps 26 men in the United Kingdom that might have that profile, which, if nothing more was known about the defendant, meant that the DNA evidence said no more than that there is a statistical probability he was the criminal of 1 in 26, not the million to 1 chance that the statistical evidence suggested.<sup>11</sup>
6. 11 As Spigelman CJ noted in *JCG*, where the paternity index was that the accused was 2.4 million times more likely to be the biological father than another person taken at random in the population<sup>12</sup>, the jury may, without being aware of the true nature of those ratios, reason that if the probability of the accused having the DNA of the father compared to a person taken at random is 2.4 million to 1 the probability that he was the in fact the father was 2.4 million to 1. The error in *JCG* was that the trial judge directed the jury that the 2.4 million to 1 ratio was “based” on a 99.9999% relative chance of paternity<sup>13</sup> when that evidence had not been before the jury.<sup>14</sup> That figure had been mentioned in the voir dire where the expert had acknowledged that it could be misleading. It had also been
- 20

<sup>9</sup> *R v JCG* (2001) 127 A Crim R 493 at [50].

<sup>10</sup> *R v Doheny and Adams* [1997] 1 Cr App R 369 at 372G.

<sup>11</sup> It is not clear that the 26 possible matches can be transposed directly to a 1 in 26 probability of guilt. Even if such a ratio correctly represented the probability of guilt, it is doubtful that the denominator would be 26 because the suspect population would rarely be the entire male population of the United Kingdom. For instance, in sexual assault cases where the offender was described as an adult male, all male children should be excluded from the suspect population. This, and other relevant exclusions, would result in a probability perhaps much higher than 1 in 26.

<sup>12</sup> *R v JCG* (2001) 127 A Crim R 493 at [31].

<sup>13</sup> *R v JCG* (2001) 127 A Crim R 493 at [36].

<sup>14</sup> *R v JCG* (2001) 127 A Crim R 493 at [37]. That would have been incorrect in any event for the random match probability ratio was not “based” on the percentage figure.

mentioned by police during the interview with the accused but was not given in evidence.<sup>15</sup>

6. 12 However, such concerns are very far removed from the present case which lies at the other end of the spectrum. In the present case, the random probability match ratios were quite low, as low as 1 in 50, and posed no risk that the jury might be misled into thinking that the ratios negated any possibility of matches other than the appellant.

### *Subliminal Impact*

- 10 6. 13 The appellant submits that the percentage exclusion ratio of 99.9% had a “subconscious” or “subliminal” impact (AWS at [36]) which invited the jury to approach the question of proof in terms of “percentages of guilt” and to round up to 100%.

6. 14 There is no objection to the equivalent random match probability ratio of 1 in 1680 but expression as a percentage formulation is said to be unfairly prejudicial because it invited forms of fallacious reasoning, in particular, the prosecutor’s fallacy (AWS at [33] – [34]), which the random match probability ratio did not. Although the figures are simply mathematically equivalent ways of expressing the same thing, it is said that the subliminal impact of percentage quantifications is significantly more compelling and unfair.

- 20 6. 15 Percentage quantifications of themselves do not have greater subliminal impact than random match probabilities or other statistical formulations. Their effect in any given case would depend largely on the figures themselves and on the other circumstances of the case. A random match probability ratio of 1 in 2, expressed either as a match that would be found in 50% of the population, or a match that would not be found in 50% of the population would carry little risk of being misunderstood or of importing some enhanced subconscious effect. At this level of probability, there is little or no distinction between the expression that a random match may be found in 50% of the population and a 50% probability that it would not. Of course as the figures approach 100% the risk that the jury  
30 may reason fallaciously to guilt increases but that is largely because the figures

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<sup>15</sup> *R v JCG* (2001) 127 A Crim R 493 at [20].

themselves become more compelling rather than the form in which they are expressed

- 6.16 The impact of the ratios also depends on what the percentages are said to signify and what explanations are provided when the statistical evidence is presented.
- 6.17 In the present case the jury was given detailed explanations of the nature of the statistical evidence and its limitations. It was explained that DNA was mitochondrial DNA which has a much lower power of discrimination than nuclear DNA and that the high random match probability ratios seen in nuclear DNA were not possible for mitochondrial DNA (T 946.5).
- 6.18 It was also explained that the random match probability ratios were averages, estimates of expected occurrences, which did not establish any particular conclusion. It was further explained that, although the ratios were about expected random occurrences, in the case of mitochondrial DNA these were not merely hypothetical occurrences for it was known that there would be actual matches with all of the appellant's maternal relatives from many generations, even people the appellant would not consider relatives (T 737.5). The jury were told that there would be "a substantial number of Turkish origin individuals" who had this profile (Professor Balding T 735.35).
- 6.19 The testing of the hair sample was done by Ms Pineda and her results were analysed by Professor Balding. The defence expert was Dr Buckleton. The 3 experts largely agreed. The defence expert, Dr Buckleton, described the Crown expert, Professor Balding, as "an absolute genius" (T 945.28) and said that he agreed with his analysis (T 947.27). Professor Balding and Dr Buckleton supplemented Ms Pineda's analysis by consulting other databases and by refining the results by reference to the Turkish sub-population but did not otherwise disagree significantly with her conclusions. Their analysis in relation to the Turkish sub-population did not contradict Ms Pineda for she had acknowledged she was not qualified to provide a genetic population analysis (T 297.35).
- 6.20 In giving evidence of the random match probability ratios all 3 experts acknowledged the limitations of their analysis, which, with the relatively low

ratios presented, could not have misled the jury into thinking that the probabilities were anywhere near certainty.

6. 21 Ms Pineda gave evidence that the probability of a random match was 1 in 1680. In giving that evidence Ms Pineda made it clear that that figure was obtained by consulting a database of 4,839 individuals (T278.30). It was acknowledged that this was a limited number and in order to “make inferences” (T278.39) as to what the frequency might be in another database, a statistical “tool”, a 95% confidence ratio, was applied to indicate an “expect[ed]” frequency in another database: “So what this means is if we were to take another database, we would expect to see this profile not more than one in 1,600 individuals.” (T278.48, repeated at T285.5).
- 10
6. 22 In cross-examination, Ms Pineda acknowledged that the database was small (T289.45 – 290.5) and the frequency ratios were based on the “assumption” that the database reflected the range of populations in the world (T289.25). Ms Pineda also acknowledged that there was a discrepancy in the C stretch of the two samples but said that such differences are not uncommon in the C stretch and the convention was to treat the difference as insignificant for matching purposes.
6. 23 Professor Balding expanded the database search and consulted the European database, EMPOP, as well as a smaller database, to take into account the Turkish sub population (T734.35). Professor Balding gave the probability ratio of a random match “in a European origin person” as “about 1 in 2000” (T735.17). The actual figure was 1 in 1836, but “roughly speaking” that was 1 in 2000 (T 735.21, 743.50). That was a “cautious” (T735.23) upper limit. The probability ratio of a random match with another Turkish person was 1 in 50 (T 735.50). That was also a cautious value and the “true match probability” (T 736.20) was less, it would be in the 1 in 100, 1 in 200 range (T 736.30). Dr Buckleton agreed (T977.25).
- 20
6. 24 Professor Balding explained that the databases from which some of this information was derived were small ( T736.35), that there were no precise numbers as to how many Turkish people would share this profile but it was “a substantial number”(T735.35) and that there were other unknown factors which would affect the ratios (T742.5).
- 30



- 6.25 Dr Buckleton said the probability ratio of a random match in the general population was 1 in 1000 (T954.20). He questioned the appropriateness of applying the SWGDM database to other populations, such as Australia (T957 – 8) but agreed with Ms Pineda and Professor Balding that, in broad terms, the appellant’s mitochondrial DNA was rare (T962.43). He also agreed with Professor Balding’s assessment that it would be found within 2% of the Turkish population (T963.15).
- 10 6.26 There was no objection to these ratios. Indeed they were confirmed by the defence expert Dr Buckleton. The objection relates to Ms Pineda’s formulation that the 1 in 1600 probability estimate could also be expressed in terms that 99.9 per cent of the population could not have this profile (T279.5). Ms Pineda explained that the two sets of figures were just a different way of saying the same thing: “The 99.9 figure is just the inverse of that. One in 1600 is the frequency of occurrence – the expected frequency. The 99.9 percent is the percentage of the population who could not have contributed to that sequence. So it’s the same information, just looking at it in two ways.” (T285.15).
- 20 6.27 As the appellant acknowledges this percentage quantification was mentioned briefly (AWS at [11], [16]). Professor Balding did not express the probability ratio in terms of percentages, nor did Dr Buckleton, until the trial judge put to him that 99.9% was just another way of expressing the 1 in 1000 ratio. Dr Buckleton agreed that 99.9% was another way of saying the same thing and that 99.95% was another way of expressing Ms Pineda’s estimate of 1 in 1600 and said that the difference between those two was “quite minimal” (T976.40). This was repeated by the trial judge in the summing up (SU at 31.29 )
- 30 6.28 In the overall context of the statistical evidence, the percentage exclusion ratio played a very minor part. The main focus of the statistical evidence was whether, and to what degree, the random match probability ratios were reliable given that there was not a full match between the two samples and whether the figures derived from the US database were relevant to the Australian population in general, and the Australian Turkish subpopulation in particular. On those issues, it was explained to the jury by both the Crown expert, Professor Balding and the defence expert, Dr Buckleton, that the statistical evidence had to be “down weighted” because the two profiles were not a full match. The jury were

also told that when the matches with the appellant's maternal relatives and the Turkish subpopulation effect were taken into account the random match probability ratios dropped to about 1 in 50.

6. 29 Nevertheless, the appellant contends that the particular risk of the percentage exclusion quantification was that it encouraged a narrow outlook and diverted the jury from conceiving of the significant number of people who would be expected to share the profile (AWS at [36] – 37], [45]). This contention derives from “exemplar cueing theory” which posits that people are more persuaded by matching statistics when they find it hard to imagine other matches and less persuaded when it is easier to imagine other matches.<sup>16</sup> Accordingly, the persuasiveness of the statistics can vary depending on how the statistics are expressed and how easy or difficult it is to imagine other matches. For example, it is said that a 1 in 100,000 random match ratio may not prompt much thought about the possibility of a coincidental match but a 1 in 100,000 people in Houston random match ratio may prompt thoughts of the possibility of coincidental matches in Houston and across the United States. Another way of “inviting” thoughts of other matches is to increase the numerator. In this way, 1 in 1000 can be expressed as 2 in 2000 or 10 in 10,000 and the higher the numerator the less impressive the statistic appears because using a number other than the fractional numerator makes it easier to imagine other possible matches.<sup>17</sup>
6. 30 It may be accepted that 10 in 10,000 suggests other matches more readily than 1 in 1000 and may therefore be less persuasive but that does not render the formulation 1 in 1000 inadmissible because a jury may be less likely to think of a possible match with that formulation. Admissibility is not in an inverse ratio to persuasiveness nor is it the case that only formulations using the highest possible numerators should be admitted. For example, in the present case, had the ratio been presented as 10 in 16,800 instead of 1 in 1680 it may have been less persuasive because it suggested the existence of other possible matches but that did not render the 1 in 1680 ratio inadmissible or unfair.

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<sup>16</sup> J J Koehler “The Psychology of Numbers in the Courtroom: How to Make the DNA Match Statistics Seem Impressive or Insufficient” (2001) 74 *Southern California Law Review* 1275 at 1282.

<sup>17</sup> J J Koehler “The Psychology of Numbers in the Courtroom: How to Make the DNA Match Statistics Seem Impressive or Insufficient” (2001) 74 *Southern California Law Review* 1275 at 1303.

6. 31 Exemplar cueing theory also posits that probability ratios such as 0.001% focus attention more narrowly on the suspect and discourage exemplar thoughts than the equivalent frequencies (1 in 100,000).<sup>18</sup> However, again, that would not render the probability ratio inadmissible. In assessing the impact of the statistical analysis the form of the mathematical expression is not the only matter to be considered. The actual figures themselves, what they purport to represent, and the accompanying explanations must also be taken into account.

10 6. 32 The present case is a good illustration. As the appellant notes, the 99.9% formulation was mentioned only briefly. It was not used by the other 2 experts (except Professor Balding when asked by the trial judge) and it was not relied on by counsel in addresses. At the time the percentage figure was given it was made explicit that it was merely another way of expressing the likelihood ratio of 1 in 1000 or 1 in 1680. This occurred in the context where it was explained that mitochondrial DNA, unlike nuclear DNA, had a low power of discrimination (T946.5). It was also explained that the ratios were subject to a number of assumptions and qualifications. Both Professor Balding and Dr Buckleton expressed their reservations about the representativeness of the US database and the reliability of applying the ratio derived from that database to Australia. This was largely the reason they developed a separate ratio for the  
20 Turkish sub-population which was far lower than the ratio for the population at large.

6. 33 Despite these misgivings, Dr Buckleton considered that it was possible to get a reasonable result because the power of DNA overcame those difficulties to some extent: "I think a database can suffer a certain level of error and still give a reasonable answer and to some extent the power of DNA rescues you. I mean the stuff actually does really work so I think it's a bit of a pity to fall back on bad data and say you get away with it but that's a little bit of what's happening in the United States." (T 974.30). Dr Buckleton agreed that the indications were that there was no extreme subpopulation effect in this case (T975.25) and the  
30 difference between his probability estimate of 1 in 1000 and that of Ms Pineda of 1 in 1600 expressed as a percentage was "quite minimal" (T976.50).

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<sup>18</sup> J J Koehler "The Psychology of Numbers in the Courtroom: How to Make the DNA Match Statistics Seem Impressive or Insufficient" (2001) 74 *Southern California Law Review* 1275 at 1284

6. 34 The jury was also informed that the statistical analysis was further qualified because it was “weakened” (T732.43) by the fact that the DNA sequence from the hair sample and the appellant’s saliva sample did not match. There was a discrepancy in the so called “C stretch” of the two samples such that they were classified as a “near” match. The difference meant that the two samples could not be treated as a “full match but it’s not nothing either”(T949.50). Professor Balding said it was customary to disregard completely the slight mismatch and treat it as if it were a perfect match but that that was “somewhat unsatisfactory (T732.45). The mismatch weakened the evidence for a conclusion “a little” but did not rule out the possibility that the samples matched. Dr Buckleton agreed with Professor Balding that it was “a minor difference”, “a small difference” (T948.35) which “down weighted” the evidence but it was not known by how much.
- 10
6. 35 There was no risk in this context, where the random match ratio was said to be as low as 1 in 50 that the mention of the percentage exclusion figure had any significant subliminal effect, nor that it would have diverted the jury from the possibility of coincidental matches. On the contrary, the statistical evidence was presented in a way to draw the jury’s attention to the possibility of coincidental matches. This was done by using the analogy of a football stadium. It was explained that the probability ratio of 1 in 1600 meant that the chances were that 10 people in the stadium of 16,000 would have matching DNA. It was further explained that the probability ratio was a “theoretical” (T298.8) figure. It was an expected ratio that did not indicate what the actual number of matches might be on any given day or that it would be anywhere near 10. It was explained that the nature of the statistical analysis was such that, on some days, there may be 100 matches and on other days, none (T298.15).
- 20
6. 36 The 1 in 50 ratio, or that 2% of the Turkish population would match and 98% of the Turkish population would not, was also explained in terms of the football stadium analogy and that in a stadium of 10,000 Turkish people, on average, 200 would have the same DNA profile as the appellant’s DNA. The true value was probably less than 200, but 200 would be a safe upper boundary (T 741.34).
- 30

6. 37 This had the same effect as increasing the numerators, for it prompted the jury to be mindful that, even in a relatively small population of 10,000 or 16,000 people, there was a possibility of between 10 and 200 other matches.

*Precision*

6. 38 The subconscious impact of match ratios has also been said to arise from the precision and concreteness with which such ratios are expressed which suggests an exactness the statistical distribution does not have. In contrast, in the present case the ratios were presented explicitly as “rough” figures, estimates based on limited information. There was no attempt to convey precision or exactness.
- 10 6. 39 Professor Balding said the match ratio he obtained was 1 in 1800, but referred to it as 1 in 1000 or 1 in 2000. He drew very little distinction between a ratio of 1 in 1000 and 1 in 2000, and used them interchangeably (T643.45), even though, mathematically one was double the other. He did the same with the random match ratio of 1 in 50. He expressed the opinion that the true ratio was 1 in 100 or 1 in 200 and it could safely be expressed as 1 in 50 (T736.30). However, in mathematical terms the 1 in 200 ratio signified four times the rarity of the 1 in 50 ratio but it would have been evident to the jury that Professor Balding and Dr Buckleton attached no significance to that difference. Both Professor Balding and Dr Buckleton acknowledged that the statistical analysis had little mathematical precision. The significance they attached to the random match ratios was that, broadly speaking, they indicated that the profile was rare, even the lower range of 1 in 50 ratio was said to be “somewhat rare” (T 735.40) but it was never suggested that the ratios were anywhere near the levels that could be mistaken for certainty.
- 20
6. 40 The possible subliminal impact of percentage exclusion quantifications in cases involving ratios of 1 in 500 million or 1 in 90 billion cannot be compared to the expression of a percentage exclusion frequency where the probabilities were as low as in the present case. There was very little danger that there would be any unfair impact in circumstances where the jury were told that the databases were small, the figures were conditional and it was known that there were a substantial number of other matches.
- 30

6. 41 Any possibility that the jury might be misled to reason to guilt by force of the statistical ratios was further undermined by the trial judge reminding the jury that the hair may have had nothing to do with the case: "There is another important matter that you must consider in relation to this evidence and it does not involve evaluation of the experts but it is a more fundamental matter. Did the hair come from the person who killed Sevda Bayrak? If it did not, it does not matter who it came from and all of that evidence of mitochondrial DNA takes the case nowhere." (SU at 32.10).
- 10 6. 42 This was a very significant distinction to the situation in *GK* or *JCG* where the paternity ratios went directly to guilt because proof of paternity established that the accused had sexual intercourse with the complainants, whereas in the present case, it was explained that it was possible that the hair had nothing to do with the offence at all, a direction which could not have been given in the relation to the evidence of paternity.
- 20 6. 43 It was not suggested that the statistical ratios were of an order that they could, of themselves, establish with any certainty that the appellant had been at Ms Bayrak's flat at the time of the murder. The statistical evidence was presented as but one part of the circumstantial case (SU 45.50). Its significance lay in the fact that the suspect population was relatively small, namely, a person or persons who would kill Ms Bayrak for no apparent reason.
6. 44 The appellant was clearly part of the suspect population because there was evidence that in the months before the killing he had been following Ms Bayrak, even threatening her. Ms Bayrak told Mrs Balaban, her elder sister, that the appellant wanted to resume the relationship and said to her that if she did not accept it then "whatever will happen to you from now on you will be responsible for that." (T776.35).
- 30 6. 45 The defence case appeared to be that the appellant had little contact with Ms Bayrak in the two years since their relationship ended, he was in a new relationship, he had moved on with his life and had never been to Ms Bayrak's new flat. The prospect that he had gone to the flat seemed less remote by the end of the trial as it was finally acknowledged that the appellant had strong feelings for Ms Bayrak and was looking for a way to end it.

6. 46 The evidence of the appellant's feelings for Ms Bayrak, calling and messaging her, following her and visiting her unannounced was significant in a number of respects. Firstly, it established the nature of the relationship between the appellant and the deceased. It showed he was fixated on Ms Bayrak even 2 years after their relationship ended. It also suggested that he was watching her movements late into the night.
6. 47 Perhaps two of the most telling details were the poem he published and the text message he sent two weeks before her death.
6. 48 On 29 June 2005 a poem was published in the Turkish Weekly News entitled "I  
10 Can Not Give Up". The content of the poem echoed the ardour of the title: "my heart burning for you like mad.....Even if you say give up, I can not give you up... ..I cannot give up."
6. 49 There was also evidence that on 11 November at about 1 am the appellant sent a SMS text saying "Sevda you are sad and crying I feel it" (CCA at [14]). The deceased became concerned because she was in fact crying at that moment. This indicated that the appellant was watching the flat. He later sent a message which was interpreted as a veiled threat: "alright, understood, there's a god above. What can I say. I pray for your health." The appellant said he sent those text messages because he thought Ms Bayrak was unhappy about her job  
20 situation (2<sup>nd</sup> ERISP Ex G Q & A 251 – 252) and he was concerned for her welfare. The jury may have doubted that he felt any such concern as less than 2 weeks later he reported Ms Bayrak to Centrelink for failing to declare income from her cleaning jobs.
6. 50 The evidence that the appellant had Ms Bayrak's flat under surveillance was important because the indications were that, on the evening she was murdered, Ms Bayrak was intercepted just as she was leaving to collect her daughter.
6. 51 Ms Bayrak was with Mr Tunc at about 8pm. She spoke to her sister just after 8pm and said she was leaving to collect her daughter. Ms Bayrak was never heard from again. A neighbour, Mr Jiang, saw a man knocking on the front  
30 door of Ms Bayrak's flat for 5 minutes at about 8 pm. This suggested that the killer arrived just after Mr Tunc left and just before Ms Bayrak left to collect her daughter. That was an interval of a matter of minutes.

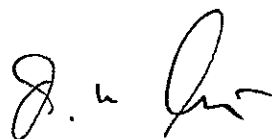
6. 52 The appellant took part in two ERISP interviews, one in December 2005 and the second over a year later in March 2006. The appellant lied in both interviews about not knowing where Ms Bayrak lived and that he had been informed of her addresses by an acquaintance, Mr Uluc, who worked for Centrelink.
6. 53 The appellant made formal admissions about those lies but the defence case was that the lies were not told out of a consciousness of guilt but “merely not wanting to implicate Mr Uluc in offences of illegally accessing information” (T1079.21).
- 10 6. 54 Aside from the 3 specific lies, the stalking evidence showed that the ERISP’s were almost entirely false. The first interview comprised over 1600 questions, the second over 600. Most of those 2000 odd questions and answers related to the appellant’s relationship with Ms Bayrak. The appellant sought to create the impression that he had no romantic feelings for Ms Bayrak and that in the 2 years since their relationship ended he had very little contact with her.
6. 55 The appellant maintained that he broke up with Ms Bayrak because she wanted to live in Turkey and he did not. He said that after their relationship ended he wanted very little to do with her because the break up had been too painful (Ex F – first ERISP Q & A 531 – 541) and he had no particular feelings for her (Q & A 711 – 718) and had moved on with his life. At one stage the appellant even  
20 claimed that he had had no contact with Ms Bayrak since September/October 2005 (Q & A 957). As the interview progressed and he was confronted with the telephone records and admitted that there had been contact on the occasions indicated by the records it became apparent that his earlier responses had been false.
6. 56 The inconsistencies were highlighted when, in closing address, it was finally acknowledged that the appellant did have feelings for Ms Bayrak and that he had written the poem in the hope that it “might rekindle” (T1074.33) her feelings for him. The poem was characterised as “quite romantic” and it was suggested that Ms Bayrak had been “somewhat flattered by it” (T 1075.10). It was even suggested that the appellant was not stalking Ms Bayrak but that Ms Bayrak had initiated most of the contacts between them and was “encouraging”  
30 him (T1081.5).



6. 57 The concession that the appellant had strong feelings for Ms Bayrak and was trying to rekindle their relationship put the Crown and defence cases on a parallel course for the Crown case was that the appellant was obsessed with Ms Bayrak and killed her when his attempts to resume their relationship were rebuffed. This placed the DNA evidence in a different light and the likelihood that he had gone to her flat, the fact the DNA evidence sought to establish, now seemed less remote.

10 6. 58 In closing address, defence counsel said that, 3 days before the killing, the appellant reported Ms Bayrak to Centrelink for undeclared income, partly because he found her fraud “distasteful” and partly because it was a way to end the relationship: “and maybe it was even an end to the relationship. A way of ending it” (T1085.30). The jury may well have thought that the acknowledgment that the appellant was struggling with his feelings for Ms Bayrak and looking for a way to end it meant that the Crown and defence cases had ultimately just about converged.

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