

[Special Contribution]

The Linguist as Expert Witness

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This article looks at some of the problems faced by linguists who choose to act as expert witnesses and some of the solutions they have produced. The chapter begins with an illustration drawn from linguistic evidence presented in a famous American trademark case. It then moves on to discuss the laws on expert evidence in different English speaking adversarial jurisdictions, concentrating in some detail on the American Daubert criteria and their significance for linguistic evidence. The chapter then examines and evaluates differing ways of expressing opinions, the semantic and the statistical and ends with examples taken from the author's evidence in two cases which went to Appeal in the Royal Courts of Justice in London.

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Scenario

In 1997 McDonald's Corporation took Quality Inns International, Inc, to court claiming that they had ownership not simply of the name McDonald's but also of the initial morpheme 'Mc' and therefore could prevent its use in other trademarks. Quality Inns had announced they were going to create a chain of basic hotels and call them McSleep, claiming, when challenged, that they hoped the 'Mc' prefix would evoke a Scottish link and with it the Scots' well-known reputation for frugality. McDonald's, who had previously successfully prevented the use of the name McBagel's when a judge had decided that the 'Mc' prefix could not be used in conjunction with a generic food product, decided to challenge the McSleep mark, claiming it was a deliberate attempt to draw on the goodwill and reputation of the McDonald's brand.

In developing their case McDonald's pointed out that they had deliberately set out, in one advertising campaign, to create a 'McLanguage' with Ronald McDonald teaching children how to 'Mc-ise' the standard vocabulary of generic words to create 'McFries', 'McFish', 'McShakes' and even 'McBest'.

Fanciful as this linguistic imperialism might seem to ordinary users of the language, particularly to those of Scottish or Irish descent who would seem to be in danger of losing their right to use their own names as trademarks, the lawyers took the claim very seriously. Quality Inns' lawyers asked linguist Roger Shuy to help with two lin-

guistic arguments, firstly, that the morpheme 'Mc' was in common use productively, in contexts where it was not seen to be linked in any way to McDonald's and secondly, that such examples showed that the prefix, originally a patronymic and equivalent in meaning to the morpheme *son* in *Johnson*, had become generic and thus now had a meaning of its own, which was recognisably distinct from both of the other major meanings of 'son of' and 'associated with the McDonald's corporation'.

Shuy chose a corpus linguistics approach and searched to find real text instances of what one might call 'Mcmorphemes'. Among the 56 examples he found were general terms like McArt, McCinema, McSurgery and McPrisons, as well as items already being used commercially such as the McThrift Motor Inn, a budget motel with a Scottish motif and McTek a computer discount store which specialised in Apple Mac computer products. On the basis of such examples, Shuy argued that the prefix had become, in the language at large, an independent lexical item with its own meaning of 'basic, convenient, inexpensive and standardized' (p. 99). Rather than resort to corpus evidence themselves, McDonald's hired market researchers to access the public's perception of the prefix directly and to do so through interview and questionnaire. The experts reported that their tests confirmed that consumers did indeed associate the prefix with McDonald's, as well as with reliability, speed, convenience and cheapness. Faced with this conflicting evidence, the judge ruled in favour of McDonald's, thereby giving them massive control over the use of the 'Mc' morpheme.

Of course, the successful defence of a trademark may occasionally have unwanted consequences. In March 2007 McDonalds went to war again, this time against the Oxford English Dictionary, after it described a McJob as 'an unstimulating, low-paid job with few prospects, [especially] one created by the expansion of the service sector'. The company's chief people officer (sic) for Northern Europe insisted unsuccessfully that the OED should change the definition to make it 'reflect a job that is stimulating, rewarding and offers genuine opportunities for career progression and skills that last a lifetime'. In fact this was one further skirmish in the constant battle to maintain the mark, because it was maintaining that the word 'mcjob' can only have one meaning 'a job at McDonalds', which is patently not what it is used and understood to mean by the general population.

Introduction

In the past twenty years, there has been a rapid growth in the frequency with which Courts in a number of countries have called upon the expertise of linguists in cases where there is a dispute about aspects of a written text — I will not treat here the related, but methodologically very different, discipline of forensic phonetics to which a brief introduction can be found in Coulthard and Johnson (2007, Chapter 7) and a much more detailed one in Rose (2002). The cases in which linguistic evidence has been used range from disputes about the degree of similarity in pronunciation and therefore

confusability of trademarks (Gibbons (2003: 285-7) and the meaning of individual words in jury instructions (Levy 1993), through the 'ownership' of particular words and phrases in a plagiarism case, (Turell 2004), to accusations of fabrication of whole texts in certain murder cases (Coulthard 2002). Usually the linguist uses standard analytic tools to reach an opinion, although few cases require exactly the same selection from the linguist's toolkit. Occasionally, though, cases raise new and exciting questions for descriptive linguistics, which require basic research, such as how can one measure the 'rarity' and therefore the evidential value of individual expressions (Coulthard 2004) or the reliability of verbal memory (Coulthard and Johnson 2007: 132-5).

On becoming a linguistic expert

For linguists wanting to move into expert witness work the criteria vary from country to country. Australia and Britain share essentially the same position, which is that it is the expert rather than the method that is recognised and so courts can allow expert opinions from anyone considered to have specialised knowledge based on ... training, study or experience [provided that the opinion is] wholly or substantially based on that knowledge. (Australian Evidence Act 1995 Sec 79)

Usually, once an expert has been accepted by one court, s/he will be accepted unchallenged by other courts at the same level. The expert is retained and paid by one side, but even so, legally s/he is 'appointed by the court' (Bromby 2002: 21) and since 2007 experts in Britain have had to include in their reports a statement to confirm that they have provided an objective, unbiased opinion.

There are, however, so far no explicit rules in Britain, as there are in the USA following the Daubert ruling (see below), on the nature of the theoretical position or the methodology or the evidence on which the expert bases his/her opinion and so, once an expert has been retained, the court will determine, '*ad hoc*, the sufficiency of expertise and the relevance of that expertise to each case in question' (Bromby 2002 9). As part of this process both the competence of the expert and the reliability of the method(s) s/he has used can be subjected to detailed examination, which can last for many hours. Even after deciding to allow an expert to give evidence, the judge(s) and/or the jury may decide the evidence is not helpful, persuasive or relevant and ignore it and occasionally, at the end of a trial, experts are severely censured by the court and/or particular methodologies deemed to be unacceptable (Hardcastle 1997).

The United States

Unlike the Anglo-Australian system, the American legal system approves the technique(s) that a witness uses rather than the witness him/herself. Rule 702 of the

Federal Rules of Evidence allows an expert to testify as a witness if:

the testimony is based upon sufficient facts or data, [and]
 the testimony is the product of reliable principles and methods, and
 the witness has applied the principles and methods reliably to the facts of the case

Rule 702 is designed to take account of the 1993 Daubert Ruling (explained below) which dramatically changed the nature of allowable evidence and distanced the American system even further from the Anglo-Australian one. In what follows, I draw substantially on Tiersma and Solan (2002) and Solan and Tiersma (2004), which readers are advised to study in their entirety.

There have been three stages in defining the admissibility of expert evidence in the United States. Until 1975, the main standard for evaluating expert testimony was the Frye test, named after a ruling in a 1923 case involving the admissibility of lie detector evidence, which required there to be general acceptability of the principles and/or methodology which the expert had used:

while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs, (293 F. at 1014, as quoted in Tiersma and Solan (2002, 223.).

As time went by Frye came to be seen as too rigorous. It was argued that scientific knowledge advances by argument and dissent, so there was pressure to allow the judge and/or jury to hear opinions from both sides when there was serious academic disagreement, and in 1975 the Federal Rules of Evidence were introduced with the following observation on the admissibility of expert evidence:

if scientific, technical, or other specified knowledge will assist a trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise. (Rule 702 as quoted in Tiersma and Solan 2002, 223.)

Even so, and confusingly, some federal courts continued to apply Frye until 1993, when the Supreme Court ruled in the case of *Daubert v. Merrell Dow Pharmaceuticals*. The main argument in that appeal was over whether expert evidence could be rejected on the grounds that the experts involved had not published their work and had thereby failed to meet the Frye test. In their ruling the Supreme Court observed that ‘the adjective “scientific” implies a grounding in the methods and procedures of science’ and then went on to propose four criteria with which to evaluate ‘scientific-ness’:

1. whether the theory ... has been tested;
2. whether it has been subjected to peer review and publication;
3. the known rate of error; and
4. whether the theory is generally accepted in the scientific community.

(509 U.S. at 593 as quoted in Tiersma and Solan 2002, 224)

This ruling left open the question of whether it covered evidence which was descriptive rather than theoretical, but a ruling in 1999, in the case of *Kumho Tire Co. v. Carmichael*, confirmed that it did:

the general principles of *Daubert* apply not only to experts offering scientific evidence, but also to experts basing their testimony on experience. (119 S.Ct. 1173 as quoted in Tiersma and Solan 2002: 224)

So, where does that leave the American forensic linguist? On the positive side Tiersma and Solan (2002: 221) note that:

courts have allowed linguists to testify on issues such as the probable origin of a speaker, the comprehensibility of a text, whether a particular defendant understood the *Miranda* warning, and the phonetic similarity of two competing trademarks.

However, in other areas the situation is more problematic, partly, perhaps, because some non-linguists have used some of the linguistic labels for methodologies which are not linguistically sound. For example, the *Van Wyk* case in 2000 seemed to set a precedent for excluding *stylistic analysis*, as the court refused to allow an expert to give evidence about the authorship of disputed documents, but, as *McMenamin* (2002) points out, the expert in the case had no qualifications in linguistics. *McMenamin* (2004) argues a strong case for the scientific nature of his own brand of forensic stylistics and therefore for its acceptability under *Daubert*. Indeed, he shows, in a case study of the significant documents in the *Jon Benet Ramsey* case (2004: 193-205), how to express opinions statistically in terms of mathematically calculated probabilities. It appears that the linguistic area of *discourse analysis* may have suffered similar loss of credibility through a non-linguist claiming expertise in the area. Tiersma and Solan quote a judge's observation in a 1984 case, *State v. Conway*, following evidence from a psychologist, that discourse analysis is a 'discipline allowing [the expert] to determine the intent of the speaker in covertly recorded conversations', which shows just how much re-education needs to be done.

Nevertheless, it must be conceded that, in cases where conclusions depend on observations about the frequency or rarity of particular linguistic features in the texts under examination, many linguists would have considerable difficulty in stating a 'known rate of error' for their results, even if this phrase is interpreted as a likelihood ratio. It is for this reason that some linguists will be forced to change their way of reaching and

presenting their opinions, while others may choose to see their role more as that of educator/teacher/‘tour guide’ than of opinion giver (Solan 1998).

Giving Opinions

The professional life of the expert linguist, as opposed to that of the academic linguist, can be very lonely, as the majority of experts work alone, on occasional cases and rarely go to court to give evidence: most of them average fewer than ten cases a year and one court appearance every two years. For this reason, giving evidence in person in court is, for the majority of forensic linguists, an uncommon and stressful event. As Shuy observes

For those who have never experienced cross-examination, there is no way to emphasise how emotionally draining it can be.... Testifying is not for the weak at heart (2002: 3–4)

Nor indeed for the weak at stomach — one of my colleagues eventually gave up, after some 25 years as an expert witness, saying he could no longer cope with the vomiting before every appearance in the witness box.

Once the data analysis has been done and an opinion reached, the linguist is faced with two interactional problems: firstly, how can s/he best transmit the linguistic insights and findings in a written report to an audience of legal professionals, who also consider themselves language experts and who, despite what was said above about the impartiality of the expert, want to (mis-)use the findings to construct a complicated legal case for innocence or guilt; and secondly, if s/he is called to give oral evidence, the linguist has to cope with the unusual interactional rules of the courtroom which involve lawyers asking questions, notionally on behalf of the court, and the witness being expected to address his answers not to the questioning lawyer but directly to the judge and/or jury. Even more difficult can be cross-examination which pits an expert, who has sworn to obey the Gricean maxims of *quality* and *quantity*, “to tell the truth, the whole truth and nothing but the truth”, against a lawyer who is under no such constraints and can apparently at will imply what he may “believe to be false” and say things for which he “lacks proper evidence”, as well as cut off the expert in midflow so that a partially completed truthful answer implies an untruth.

Maley (2000: 250), in an excellent paper examining linguistic aspects of expert testimony, observes that

expert witnesses, particularly if they are new and inexperienced, tend to be quite unaware of the extent to which shaping and construction of evidence goes on.... All too often they emerge frustrated from the courtroom, believing that they have not been able to give their evidence in the way they would like and that their evidence has been twisted and/or disbelieved.

And this despite the fact that experts are generally allowed speaking turns that are on average two to three times longer than those of other witnesses (Heffer 2002).

All expert witnesses face these communication problems, but the linguist has the additional and unique problem that everyone in the court is in some senses an expert on language. Indeed it is very difficult to call a linguist to give evidence on word meaning, because courts are mainly interested in two kinds of meaning: *technical*, that is legally defined meaning, for instance the meaning of ‘dusk’ in a statute which says ‘The park gates will be closed at dusk’, and where ‘dusk’ will have been given a specific meaning elsewhere in the statute of something like ‘30 minutes after sunset’; and *commonsense* meaning, which is what a jury, being a collective representative of the common man, thinks a word means — so much so that juries are normally denied access to dictionaries within the jury room.

When acting as an expert the linguist will typically be asked first to write a report expressing an opinion — (McMenamin 2002: 176–8 has a useful section on report writing) — and then later s/he may be asked to go to court to present and defend that opinion.

In 2002 Stuart Campbell was tried and convicted for the murder of his niece, Danielle. Part of the evidence against him was a couple of text messages sent to his phone from Danielle’s phone shortly after she disappeared. The prosecution suspected that he had actually sent them to himself using her phone and I was asked to compare the style of the two suspect messages with a set of 70 which Danielle had sent over the previous three days. Unfortunately there was no similar corpus of messages composed by Campbell to use for comparison purposes.

Below is the first of the suspect text messages:

HIYA STU WOT U UP 2.IM IN SO MUCH TRUBLE AT HOME AT MOMENT EVONE HATES ME EVEN U! WOT THE HELL AV I DONE NOW? Y WONT U JUST TELL ME TEXT BCK PLEASE LUV DAN XXX

It displays a series of linguistic choices which were either absent from, or rare in, the Danielle corpus; for example, the use of capitals rather than sentence case, the spelling of ‘what’ as ‘wot’, the spelling in full of the morpheme ‘one’ in ‘EVONE’, rather than its substitution by the numeral ‘1’, the omission of the definite article in the abbreviation of the prepositional phrase ‘AT MOMENT’ and the use of the full form of the word ‘text’ rather than an abbreviation ‘TXT’ in the phrase TEXT BCK. The problem was how to reach and then express an opinion on the likelihood that Danielle did or did not produce the message.

Expressing opinions semantically

The majority of forensic linguists (and phoneticians) have traditionally felt that they were unable to express their findings statistically in terms of mathematical proba-

bility and so expressed them as a semantically encoded opinion. Indeed, some experts simply express their opinion without giving any indication to the court of how to evaluate its strength, or of how that opinion fits with the two legally significant categories of 'on the balance of probabilities' and 'beyond reasonable doubt': However, a growing number of experts now use a fixed semantic scale and attach that scale as an Appendix to their report to enable the reader to assess the expert's confidence in the opinion s/he has reached.

At the time of the Danielle case I was using the scale of opinions below, which I had adapted from the 11-point scale devised by members of the International Association of Forensic Phoneticians:

Most Positive

- 5 'I personally feel *quite satisfied* that X is the author'
- 4 'It is in my view *very likely* that X is the author'
- 3 'It is in my view *likely* that X is the author'
- 2 'It is in my view *fairly likely* that X is the author'
- 1 'It is in my view *rather more likely than not* that X is the author'
- 0 'It is in my view *possible* that X is the author'
- 1 'It is in my view *rather more likely than not* that X is *not* the author'
- 2 'It is in my view *fairly likely* that X is *not* the author'
- 3 'It is in my view *likely* that X is *not* the author'
- 4 'It is in my view *very likely* that X is *not* the author'
- 5 'I personally feel *quite satisfied* that X is the *not* author'

Most Negative

The opinion I gave was -2 on the above scale, i.e. that it was *fairly likely* that Danielle had *not* written the text message, but I agonised long and hard over which semantic label would best convey my assessment of the strength of the evidence as indeed I had with several previous cases. Broeders (1999) suggested that what was happening in such cases was that:

experts, in using degrees of probability, are actually making categorical judgements, i.e. are really saying yes or no. Even if they use a term like *probably* (*not*), I think they are subjectively convinced that the suspect did or did not produce the sample material. (Broeders 1999: 237)

That was certainly true for me. Broeders went on to observe that the choice of a given degree of likelihood on a scale like this is irremediably subjective, which is why two experts might reach opinions of differing strengths based on exactly the same data. Even so, he stressed that a subjective judgement should not be condemned simply because it is subjective:

The crucial question is not whether [it] is subjective or objective, but whether it

can be relied on to be correct (ibid.: 238).

Nevertheless, a growing body of opinion is opposed to the use of such semantic scales, especially because, even when they *are* accepted by a court, an unsolvable problem remains — how can one be sure that judges and juries will attach the same meanings to the labels as did the experts who chose and applied them? This point was brought home to me in a court martial where I expressed my opinion as ‘very likely’ on the above 11-point scale and another expert expressed her opinion as ‘very strong support’ on a 9 point scale. Neither of us was allowed to say how many points there were on our respective scales, let alone show the full scale nor even gloss the particular category chosen, even though at the same time the defence lawyer did his best to persuade the other expert to lower her opinion from ‘very strong’ on the grounds that another expert had evaluated exactly the same evidence as only ‘strong’.

An added complication is that, at the end of the trial, the triers of fact themselves, the jury, are not allowed the luxury of degrees of confidence; they have to work with a binary choice of Guilty or Not Guilty. So, however hedged the individual expert’s opinion is when s/he presents it, the judge and jury have ultimately to make a categorical judgement as to whether to interpret the evidence as supportive of the prosecution or the defence case or as simply inconclusive.

Expressing opinions statistically

Broeders (op. cit.) argued that one should be worried about opinions expressed semantically, not because they are subjective, but rather because far too often the experts who use them are expressing their opinions in the wrong way. He, and later Rose (2002), noted that an expert can offer an opinion on two things:

firstly, on the probability of a hypothesis — so in linguistic cases, for example, on the hypothesis that the accused is the speaker/writer — given the strength of the evidence which the expert has analysed; and

secondly, on the probability that the evidence would occur in the form and quantity in which it does occur, given the *two* hypotheses that the accused is and, crucially, also is *not* the speaker/writer.

Both authors recommend the second approach. Indeed Rose quotes Aitken (1995: 4) in arguing that the former type of opinion, which, he says, is tantamount to deciding on the likelihood of the accused being guilty, is the exclusive role of the judges of fact and for this reason responsible scientists must confine themselves to talking about the likelihood of the evidence. Rose supports his argument by pointing out that no expert can make an estimate of the likelihood of guilt or innocence on the basis of the linguistic evidence alone; only those with access to all the available evidence can assess the value of each piece. So, for example, a forensic handwriting colleague of mine concluded,

after exhaustive comparisons, that it was very likely on the basis of the evidence he had analysed, that a disputed signature on an Irish will, which had been written with a ballpoint pen, was genuine. But then, fortunately before committing his opinion to paper, he discovered that the will was dated before the invention of ballpoint technology!

Broeders and Rose both argue that not only does their approach have logic on its side, but it also has the added advantage that it enables probability to be expressed statistically rather than semantically. Essentially the method involves first looking at the *likelihood* of the prosecution hypothesis given the raw data on each of the particular features being examined. For example, imagine an anonymous letter which includes the non-standard spelling ‘*of course*’. In attempting to support the prosecution hypothesis that the accused wrote the letter we discover that 80% of a sample of attested letters written by the suspect also display this feature. However, in support of the defence hypothesis that the accused was not the author, we discover that in the general population writers also use the feature 10% of the time. How do we now assess the evidential strength of this finding, i.e. that we would expect the suspect to use it 10% of the time anyway, but that in fact s/he is using it much more?

To start with; we produce a *likelihood ratio* by dividing one percentage by the other, i.e. 80/10 and so get a likelihood ratio of 8. Interpretation of this ratio, however, is not quite so simple. It is certainly true that, as Broeders (op. cit.: 230) expresses it, “to the extent that the likelihood ratio exceeds 1 the evidence lends greater support to the [prosecution] hypothesis, [while] if it is smaller than 1 it supports the alternative hypothesis”. Unfortunately, that doesn’t tell us exactly how much greater support a likelihood ratio of 8 gives — we will return to this question of interpretation below.

A major advantage of this method of expressing the weight of evidence statistically in this way is that it allows the user to combine several pieces of evidence or rather several likelihood ratios together, by multiplication, in order to produce a composite likelihood ratio: when combined together, all ratios that are greater than 1 will increase the overall likelihood, while any ratio of less than 1 will reduce it. So, to continue our imaginary example, there might be a series of other distinctive features co-occurring in the anonymous and attested letters like *their* spelled as *there*, *you’re* spelled as *your* and possessive *its* spelled as *it’s*. These features may be found by themselves to have low likelihood ratios of, respectively, 1.4, 1.5, 1.7, but when they are combined with the likelihood ratio of 8 already calculated for *ofcourse*, they produce, by multiplication, the much higher ratio of 28.56. In other words after examining the four features, we can now say on a principled basis that it is 28 times more likely that the suspect wrote the letter than that a member of the sample general population did.

One strong argument in favour of this statistical approach is that it allows the easy incorporation of counter indications as well. Whereas experts using the ‘evidence to evaluate the hypothesis approach’, as I was in the Campbell case, have to decide what weight to give to any evidence which does not support the indication of the majority of the features analysed — should they, for example, allow such evidence to reduce their

opinion by one or two degrees of certainty or by none at all — by contrast, with a likelihood ratio approach, any measurement which supports the defence hypothesis, and so by definition has a likelihood ratio of less than 1, will simply reduce the cumulative ratio. So let us now imagine we add in the feature *whose* spelled as *who's*, which has a ratio for the letters under consideration of 0.85, the cumulative ratio will now fall to 24.28.

While such a statistical approach has obvious attractions, it does present very real problems to both phoneticians and linguists when they try to calculate the defence likelihood ratio. Firstly, how does one establish what is a relevant comparison population of speakers or texts, and how does one get access to, and then analyse, the data from that population, particularly in a world where lawyers and courts are not willing to pay for what might be thought to be basic research. At least in the area of forensic phonetics there are already agreed reference tables for such things as pitch of voice and solid evidence about the effects of telephone transmission on the pitch of the first formants of vowels. In the area of linguistics there is even less reference data, although specialist corpora are being created: McMenamín, for instance, (op. cit.: 154), reports using a corpus of 742 letters for comparison purposes and Grant and Olsson have created corpora of text messages. Of course for some purposes, (see Coulthard, 1993, 1994) evidence can be drawn from already available general corpora like the Australian National Corpus, the British National Corpus, the Collins Bank of English and the American National Corpus.

But then, even if we are able to calculate the defence ratios, we are still not out of the trees, because we need to know how to evaluate the significance of the resulting composite likelihood ratios. And there is the added problem of whether a lay jury can cope with likelihood ratios, or whether they will simply introduce even more confusion.

Rose (op. cit.: 62) proposes solving this problem by grouping all numerical likelihood ratios, once they have been calculated, into five semantically labelled categories, which, he suggests should be transparent to the jury:

<i>Likelihood ratio</i>	<i>Semantic Gloss</i>
10,000+	Very strong
1,000–10,000	Strong
100–1,000	Moderately strong
10–100	Moderate
1–10	Limited

However, such a translation is by no means universally accepted.

Even if one accepts Rose's argument for the theoretical advantages of likelihood ratios, there remain two major doubts. Firstly, after rejecting a scale of *opinions* expressed semantically, we have ended up with a scale of *likelihoods* expressed semantically, although admittedly this time, if two experts agree on the facts to be considered, they will necessarily agree on the likelihood ratio, too. Even so, the problem remains

of whether juries can and will interpret the semantic expression of the ratios as the expert intended. Secondly, we don't yet know how appropriate the labels are as glosses for the ratios, even though the category cut-off points are numerically neat. On the one hand, courts work with the concept of 'beyond reasonable doubt' which does not have a defined likelihood ratio, although a lay juror, along with statistician A. P. Dawid (2001: 4), might be happy to equate the phrase with one chance in a hundred. On the other hand, one area of forensic investigation, DNA analysis, seems to be working with very much higher likelihood ratios:

His counsel, Rebecca Poulet QC, reminded him of DNA evidence which showed his profile matched that of the attacker, with the chances of it being anyone else being one in a billion. (<http://news.bbc.co.uk/1/hi/england/3496207.stm>)

In principle though, the judicial system should be attracted by the fact that likelihood ratios derived from a variety of types of evidence can be combined to produce a composite likelihood ratio. In an ideal Rosean world, juries would have a statistician to help them weigh all the evidence, and, unlike the individual expert, the jury would be able to take account as well of such *prior odds* as how many possible suspects there are. For example, if there are five suspects, then before any evidence has been considered the odds that one of them is guilty are $1/4 = 0.25$, if there are only two suspects the odds are $1/1 = 1$.

Despite obvious academic support for the use of likelihood ratios, it may be a long time before they get general acceptance in courts. *The Times* (9 May 1996, p. 36) reported the opinion in an Appeal Court judgement (*R v. Adams*) where, in the original trial, a statistician had been allowed to instruct the jury about both Bayes theorem and underlying likelihood ratios and then how to create and sum the ratios in order to produce a composite ratio. The Appeal Court judges ordered a retrial and observed that, although the likelihood ratio 'might be an appropriate and useful tool for statisticians ... it was not appropriate for use in jury trials, nor as a means to assist the jury in their task'. After a second trial in which the same expert was allowed to instruct a different jury, there was a second appeal, at the end of which the judges opined:

Introducing Bayes' Theorem, or any similar method, into a criminal trial plunges the jury into inappropriate and unnecessary realms of complexity, deflecting them from their proper tasks. Reliance on evidence of this kind is a recipe for confusion, misunderstanding, and misjudgement.

(<http://www.herkimershideaway.org/writings/bayes.htm>)

And that, for the moment, is the situation in the British courts: experts are still able to express opinions without relating them to probabilities or likelihood ratios.

Consulting and testifying as tour guides

So what remains for the linguist whose findings cannot be appropriately presented in a statistical way? Solan (1998) addresses a problem which is unique to experts in linguistics, the fact that the judges of fact, whether they be actual judges or jury members, are seen for most purposes to be their own experts in the area of language use and interpretation — the law is, much of the time, concerned with the meaning(s) that ordinary speakers attach to words and expressions. Even so, there is a role for the linguist, which is to explain and elucidate facts about language and usage as a result of which judge and jury will then be in the same position as the linguist and so can make linguistically informed decisions. In Solan's words:

my linguistic training has made me more sensitive to possible interpretations that others might not notice and I can bring these to the attention of a judge or jury. But once I point these out and illustrate them clearly, we should start on an equal footing (p. 92).

To expand Solan's observation, linguists are not only 'experts in the nature of meaning' but also experts in the nature of linguistic encoding at both lexico-grammatical and textual levels and so there is a guiding role for the linguist in these areas as well, both before and during a trial.

One British example of the expert sensitising the lay audience comes from my evidence in the Appeal of *R v. Robert Brown*. In Brown's disputed statement there occurs the phrase *my jeans and a blue Parka coat and a shirt*. The accused claimed that a monologue confession attributed to him had in fact been elicited by question and answer and transformed by the interviewing officers into monologue form. As part of his evidence in support of Brown's claim, I focussed on the two clauses "I was covered in blood," "my jeans and a blue Parka coat and a shirt were full of blood." To a linguist it is clear that the phrasing of the subject of the second clause is most unnatural; no one would refer to their own clothes with the indefinite article once they had begun a list with the possessive determiner. The most likely use of 'a' in this context would be to distinguish between 'mine' and 'not-mine'. For example, "I looked round the room and I saw my jeans and a blue Parka coat and a shirt, they were full of blood" would be perfectly natural, but that meaning, of course, didn't make any sense in a narrative where all the clothes referred to belonged to the narrator. The phrase "a blue Parka coat and a shirt" could occur quite naturally, of course, as a result of a careless conversion of a sequence of short questions and answers into monologue form and one could see how it might have happened by looking at the following sequence taken from the record of an immediately preceding interview with Brown:

What were you wearing?

I had **a** blue shirt and **a** blue parka

In this context the use of the indefinite article is normal; as just noted above, when items are introduced for the first time, the indefinite article is the natural choice. Once the oddity of the phrase and the occurrence of a similar phrase in the interview had been pointed out the appeal court judges they were as competent as any linguist to draw inferences from this oddity.

A substitute prosecution witness

One of the important points that Solan makes is that, although juries and judges may well be able to process words, phrases and even sentences as well as any professional linguist, they may have problems with long documents or a series of related documents, because they may not be able to make the necessary links:

Of course a jury can read the document[s]. But not all jurors, without help, can focus on a phrase in paragraph 24 of a contract that may have an impact on how another word should be interpreted in paragraph 55. (p. 94)

In the Paul Blackburn Appeal it was also important to draw the attention of the judges to two phrases occurring in two different documents, one a record of a dictated statement, the other a record of an interview:

- | | | |
|-----|-----------|--|
| i) | Statement | I asked her if I could carry her bags she said “Yes” |
| | Interview | I asked her if I could carry her bags and she said “yes” |
| ii) | Statement | I picked something up like an ornament |
| | Interview | I picked something up like an ornament |

Linguists of most persuasions are in agreement that the likelihood of two speakers independently producing exactly the same phrasing reduces dramatically with the length of the expression and the likelihood of them choosing two or more identical phrasings is even more unlikely. However, the linguist’s ‘knowledge’ is the total opposite of lay belief. When faced with the problem of convincing the Appeal Court judges of the significance of the identical expressions, I chose the following procedure.

Firstly, I demonstrated that even short sequences of words can be unique encodings, by looking at the occurrences of the words ‘I asked her if I could carry her bags’ in a series of Google searches. The results at the time were as follows:

<i>Sequence</i>	<i>No. of Occurrences</i>
I asked	2,170,000
I asked her	284,000
I asked her if	86,000
I asked her if I	10,400
I asked her if I could	7,770
I asked her if I could carry	7

I asked her if I could carry her	4
I asked her if I could carry her bags	0

Using these examples, I argued that, if there was not a single example of anyone having ever produced this sequence, the chances of even longer sequences occurring twice in different documents was infinitesimal, unless, of course, one was derived from the other. When, writing this chapter, I re-checked the Google figures for “I asked her if I could carry her bags” and found, to my horror, not none but five instances of the phrase. However, as the adage goes, it is the exception that proves the rule. There is now a website devoted to Paul Blackburn’s case which carries the disputed statement, so one of the instances is the original saying, three of the others are web-versions of Coulthard (2004) which reports the case and the final instance is a Dutch university PowerPoint quoting the example from Coulthard (2004). In other words the five instances are all quotings of the same single saying.

To strengthen the argument used to the court, I accessed Google to find another case, this time one involving Lord Justice Rose, who was to preside at the trial. On typing in the words ‘Lord’, ‘Justice’, ‘Rose’ and ‘Appeal’ the first three citations I found were concerned with an appeal by a famous British politician — Lord Archer — against his conviction for perjury. The first hit of all was:

Guardian Unlimited | Special reports | Archer loses *appeal* bid
 ... was not present at today’s hearing, had his application for permission to *appeal* against the conviction rejected within hours. *Lord Justice Rose*, sitting with
 ... [www.guardian.co.uk/archer/article/ 0,2763,759829,00.html](http://www.guardian.co.uk/archer/article/0,2763,759829,00.html)

I accessed the full citation, which is reproduced in part below as Text 1, and from it selected the first phrase quoted from Lord Rose “For reasons we will give later in the day”, which is highlighted in *italics*.

Text 1

Archer loses appeal bid

Lord Justice Rose, sitting with Mr Justice Colman and Mr Justice Stanley Burnton in London, told Archer’s QC Nicholas Purnell: “*For reasons we will give later in the day* we are against you in relation to conviction”.

At the start of the hearing Nicholas Purnell QC, outlining the grounds of appeal, said: “The submission that we make on behalf of Lord Archer is that *the first and fundamental ground* which interconnects with all the other grounds of appeal was that the learned trial judge wrongly exercised his discretion not to sever the trial of Edward Francis.”

Mr Purnell said the decision of the judge, Mr Justice Potts, not to sever the trial of Francis had an “*unbalancing effect on the equilibrium*” of the trial”.

Counsel argued that Mr Francis was “in a position effectively as a *substitute prosecution witness* and a substitute prosecutor”.

Given the nature of Appeal Court judgements *for reasons we will give later in the day* seems to be an unremarkable phrase for an appeal court judge to use, particularly as a lot of judgements are produced some time after the verdict is announced. Yet a search returned only seven occurrences. Every single one of them was about Lord Rose; indeed they were all reports of this same single utterance at the end of the Archer appeal.

I then took three other short phrases which I highlighted in italics in the extract above, this time from Nicholas Purnell, Lord Archer's lawyer, each of them apparently not unusual phrases for a lawyer to utter, "the first and fundamental ground", an "unbalancing effect on the equilibrium" of the trial and a "substitute prosecution witness". For these phrases Google found 7, 10 and 4 instances respectively, but again all the instances were versions of the same single utterings.

This seemed to be a simple and efficient way of illustrating uniqueness of expression in court, but when I presented this illustration to the lawyers, they declined to submit it to the judges and one of them describing it as 'whimsical'.

However strong the expert feels the evidence to be, its successful presentation in court, indeed whether it is even presented, depends crucially on the lawyers. Sometimes (the expert feels that) the lawyer omits essential facts during the Evidence in Chief questioning, sometimes successful cross-examination neutralises some of the points and sometimes the evidence is used for other purposes in cross-examination. And then there is the use to which no one has access, the jury deliberations. All experts would like to know how best to present their evidence for the benefit of the jury — most would love to receive from the jury some equivalent of those end-of-module evaluation forms beloved of university administrators.

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