Language and Law

A resource book for students

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Chapter B9

Techniques in Forensic Linguistics

B9

TECHNIQUES IN FORENSIC LINGUISTICS

Unit A9 introduces four main ways in which forensic analysis can contribute to the administration of justice. In this unit, we explain how such analysis is performed in a selection of cases and ask some more specific questions: What analytical tools are available? How are those tools used? What are the main challenges associated with forensic linguistic approaches, for instance as regards the reliability of evidence presented?

The language expert

> I do not call myself a forensic linguist. I neither object to the use of the term nor particularly care whether or not I am called one. The fact is, I consider myself a linguist who, in this instance, happens to be carrying out his analysis on data that grows out of a court case. I see no reason to add the word forensic, which is a description of the data and the area in which a language problem resides.
>
> (Shuy 1993: 200)

Implicit in Shuy's view here is that there is no significant difference between a linguist and a forensic linguist; the same linguistic techniques could be applied in either a legal or non-legal setting. An example of analogous investigative techniques being used in legal and non-legal contexts can be found in relation to fiction: it was the forensic linguist Patrick Juola who established that J. K. Rowling was the probable author of the novel *The Cuckoo's Calling* (which had been published under the pseudonym Robert Galbraith), an insight subsequently confirmed (Rothman 2013).

More generally, Shuy's point is that linguistics as a discipline claims truth in its descriptions and scientific rigour in its analyses; the expertise it applies in other fields cannot be bent to the interests of a particular party. It is for the lawyer concerned, Shuy emphasises, to decide whether the evidence a particular linguist would give is helpful to the case being developed. A trained and experienced linguist, Shuy maintains, has the ability to describe language and linguistic processes precisely. Nevertheless, since most cases are problem-based, there will still be creative skill involved in deciding what the most appropriate investigative tool is, or whether to devise a combination of methods that solve a problem more convincingly. Communicating to an audience of legal professionals (especially in a stressful courtroom setting) may be a further challenge, calling for effective presentation of findings (Coulthard and Johnson 2007).

Analytical tools used in forensic analysis of texts

Methods used in forensic linguistic analysis may be quantitative or qualitative. The most commonly applied and recognised forms of analysis, in terms of traditional linguistic sub-disciplines, appear to be phonetic/phonological, followed by corpus-based investigation. The analytical tools described below are organised by sub-discipline. But

the reader should bear in mind the following points: the list is not exhaustive; the categories overlap; and more than one method is likely to be used in a given analysis.

Handwriting analysis

Signatures on legal instruments (e.g. on a will, testimony or contractual agreement) have been used as authentication of the identity and intention of the signatory for hundreds of years. To decide whether two samples of handwriting, such as a signature, are written by the same author, it is necessary to study various components of the text: visual similarities, size of words, strength and acceleration of pen movements, etc. Although many linguists are interested in writing systems (historically and comparatively), this kind of handwriting analysis (sometimes known as **graphology**) is a specialised skill rarely if ever taught in linguistics departments.

While most handwriting analyses are performed in order to determine authorship, there has also been some interest in using handwriting analysis to gauge the psychological state of the author. Such interest died down, however, after doubt was cast on whether this method can meet scientific standards of validity (see the collection of essays in Beyerstein and Beyerstein 1992).

Since forgery of signatures is commonly an element in fraud cases, however, some police forces have in-house experts in handwriting analysis and some engage external consultants. But expertise in handwriting analysis now tends to have less relevance because of advances in technology. Fewer people write cheques and many banks and other institutions no longer rely on signatures as a means of identification (e.g. for making withdrawals at counters, verifying a credit card transaction, collecting registered mail, or authorising access to reserved areas).

Forensic phonetics

Forensic phonetic analysis is most commonly used in **speaker identification**. This process typically involves comparison of speakers of two or more speech samples, usually in the form of an audio recording of the speech event type in question (e.g. hoax call or ransom demand) compared against reference samples obtained from suspects. Occasionally, forensic phoneticians also engage in **speaker profiling** when suspects are not known (see Unit C9).

Nolan (2004) warns, however, against relying on the ear alone for speaker recognition. Today, auditory and acoustic methods are often used as a complementary form of analysis. **Auditory analysis** (i.e. perceptual judgment made by phonetically trained experts) can assess voice quality at both the segmental level (pronunciation of consonants and vowels) and at the suprasegmental level (such as intonation and tempo). **Acoustic analysis,** typically automated and digitised in the form of a spectrogram, measures physical quality of sound such as frequency, duration and amplitude (Foulkes and French 2012).

Although forensic phonetics is a highly sophisticated area of linguistic analysis, the reliability of speech evidence cannot be compared to DNA or fingerprints. Since there is no completely unchanging feature of any voice (change takes place over time, and may be triggered by events such as shouting or infection of the larynx), and since no vocal feature appears consistently in all utterances by the same speaker, the forensic

phonetician can at best make a probabilistic (as opposed to absolute) statement about speaker identity. Vocal disguise, noise and quality of recording all add to the challenge of accurate assessment.

Apart from speaker attribution and profiling, the forensic phonetician may also contribute to accurate **transcription** of a legally relevant recorded speech event and in designing a voice line-up for earwitnesses (Coulthard and Johnson 2007).

Syntactic analysis

Syntactic analysis may be useful in cases in which communication evidence is presented, in that syntactic complexity, among other linguistic features including vocabulary choice and discourse organisation, offers a proxy indicator of whether a text is comprehensible to the reader.

Levi (1994) reports testifying on how syntactic features such as multiple negatives, complex embeddings, nominalisations, subjectless passive structures and difficult combinations of logical operators (e.g. *and*, *or*, *if* and *unless*) are all likely to interfere with understanding. The object of her analysis was a letter sent to inform AFDC (Aid to Families with Dependent Children) claimants of their rights. Part of the letter is reproduced below:

> If your AFDC financial assistance benefits are continued at the present level and the fair hearing decides your AFDC financial assistance reduction was correct, the amount of AFDC assistance received to which you were not entitled will be recouped from future AFDC payments or must be paid back if your AFDC is cancelled.

Levi demonstrated that the letter required substantially higher reading levels than those possessed by welfare clients, who were found on average to have reading skills no higher than eighth-grade literacy. The court ruled that a state agency should communicate in terms comprehensible to the client and ordered a rewrite of the letter (*Doston v. Duffy* 1998).

Semantic and pragmatic analysis

Linguistic meaning is inherently uncertain and is subject as we have seen to divergent interpretations. Evidence as to meaning is also usually interpretive rather than identificatory. It is concerned either with the range of plausible meanings a given word or expression is capable of bearing, or else with the meaning most likely to have been ascribed in a precisely specified context: what, for example, must statement X have meant to readers of document Y on day Z?

Interpretive evidence is only occasionally accepted by courts. Most lawyers and judges see themselves as the appropriate experts and adjudicators on meaning (Coulthard and Johnson 2007); legal professionals are sometimes also sceptical whether expertise in meaning can extend far beyond articulate presentation of ordinary language competence. When there is doubt as to meaning, they are more likely to appeal to a dictionary than a linguist, notwithstanding the fact that linguists do not focus only on denotational (dictionary) meaning but also research common usage, etymology, collocation, and social and contextual meaning.

Meaning evidence can nevertheless occasionally form the basis for argument as to the adequacy or otherwise of product warnings (e.g. the commonly used 'For external use only' warning label; see Tiersma 2002), or regarding similarities between two trade marks (e.g. whether the prefix *Mc* carried a purely patronymic or more general meaning in *McSleep v. McDonald's*; Shuy 2003) Meaning evidence has also been submitted where the question for the court was one of comprehensibility, for example regarding the difficulty of words in jury instructions (see *reasonable doubt* in Dumas 2002).

To the extent that the meanings of utterances are commonly underdetermined by their semantics, pragmatic dimensions of meaning can also become objects of analysis in a legal context; we look in more detail at how Gricean maxims have been invoked in 'language crime' cases in Unit C9.

Corpus analysis

Corpus tools provide a useful resource in **authorship attribution** if a sufficient sample is available for comparison between the text or texts in question and other relevant texts of known authorship. It is possible to compare texts in order to see how similar they are in terms of stylistic markers such as relative frequency of particular words and their patterns of co-occurrence or collocation. Such techniques could in principle also be helpful in copyright infringement cases in establishing the extent of discontinuous direct copying embedded in a publication allegedly derived from a prior published work (Durant 2010b).

Relatedly, corpus analysis has been used in textual disputes concerned with unauthorised appropriation of words and ideas: **plagiarism**. A corpus linguist (offering a different kind of authority from automated plagiarism software) can identify textual features showing (or appearing to rule out) evidence of direct borrowing. Detecting paraphrased or translated plagiarised texts is more challenging. But recently, forensic linguists have started to develop relevant techniques for this (Turell 2008). Advanced plagiarism software works very differently from Web search engines; for example, it allows **segment-by-segment comparison** (improving precision), and can be set to register different word forms as still constituting a match (e.g. *detecting* and *detection*; see Woolls 2012).

Problems associated with plagiarism have escalated in many walks of life, including education, because of the availability of texts on the Internet. Many universities and professional bodies now use automated plagiarism detection software to screen submitted material. The Internet has, however, simultaneously proved to be a very helpful corpus for use in detecting plagiarism as well as in committing it.

Discourse analysis

Forensic discourse analysis typically examines conversational features (e.g. back-channel behaviour, topic initiation, topic recycling, response and interruption strategies, intonation markers, pause lengths and local strategies of ambiguity resolution) in order to ascertain what is going on not only at the surface level of discourse, but also at the level of intention and motivation.

Bribery, which Shuy (1993: 20) describes as 'one of the more common "white-collar" crimes', provides a clear instance of a complex but analysable discourse event: a bribe

can be clearly described in terms of a 'completed and felicitous' bribe structure; so alleged bribery events can be analysed into a series of necessary, component elements: problem, proposal, completion and extension. Each phase in a bribe, according to Shuy, involves typical tasks and roles for the bribe offerer and for the bribe receiver, as well as typical forms of talk that realise that phase. Through analysis of the speech-event structure of bribery, a bribe can be distinguished from other, cognate (but in legal terms non-equivalent) speech events such as an offer: 'The difference between an offer and a bribe', Shuy (1993: 43) suggests, is simply this: 'in the quid pro quo of a bribe, one of the elements is illegal'.

Ethnography and social scientific tools

Linguists have also adopted methods of data collection traditionally used in other social science disciplines that can also be useful in legal investigations and proceedings. Such methods seek to demonstrate, for example, how an average person or a certain population understands or reacts to a given text. Methods used include suitably structured questionnaires and surveys (though these kinds of study may be undertaken by survey experts instead), ethnography, computational and statistical tools, or controlled experiments (e.g. Remez *et al.* 1997; Charrow and Charrow 1979). In a controlled study, Stephan and Stephan (1986) show how mock jurors judged the defendant to be more guilty if his or her testimony was presented in a foreign language before it was presented in English by an interpreter. Similarly, Frumkin (2007) showed that accent and ethnic background affect mock jurors' perceived but unjustified preferences in eyewitness testimony.

Ethnography offers useful ways for revealing problems in **cross-cultural communication**. Distinctive language habits formed by social groups may be misunderstood by an out-group. Eades (2002), for example, found that Aboriginal people in Australia have a tendency to say 'yes' in answer to a question even when they do not understand that question or may disagree with the proposition put to them. Such a convention can lead to disastrous consequences in a legal setting, for instance if a police officer takes an apparently positive response as an admission of guilt. Even not saying anything can be problematic in this context. Silence, for Aboriginal people, is considered acceptable etiquette before answering a question but may be interpreted as evasion in court. Based on long-term analysis of cross-cultural communication breakdowns, Eades has drawn attention to numerous instances of how the Australian justice system has failed its Aboriginal population in relation to language issues.

The forensic linguist as expert witness

While recognising how far forensic linguistics has grown as a professional specialism over the last two decades, we conclude this unit with brief comment on the process that leads from recognition of a language issue in a legal setting through to the admissibility and submission of expert evidence in a courtroom.

Problems commonly arise surrounding the particular language used in a situation associated with a crime or legal dispute. Some kind of analysis of and speculation about that language – at varying levels of linguistic awareness and formality or informality – very often takes place during investigation of an alleged crime or dispute. Mostly

detectives and/or lawyers examine the language-related problem themselves, based on their own skills and professional experience. They may also express their observations (including in court) using words and concepts that reflect their investigative or legal approach and expectations; but usually such **folk linguistic** commentary takes place 'behind the scenes', during whatever investigation takes place.

Where legal procedures allow, however, investigators or lawyers have increasingly seen value in deepening or extending such understanding by commissioning specialist examination of the data and incorporating resulting insights into the ongoing investigative and possibly trial process. Where one or more linguistic experts are engaged, occasionally (but increasingly frequently) the linguist goes to court and participates as a consultant, or **expert witness** (Coulthard and Johnson 2007). The resulting expert evidence may or may not be admitted by the court, usually after legal argument and in the context of widespread reluctance in some legal systems to allow expert opinion where the possibility exists of doing without it. In particular, some judges are sceptical whether understanding language calls for anything more than a competent speaker's common sense. At present, submission of expert linguistic evidence also takes place very unevenly in different jurisdictions, with the greatest reported frequency in the USA and Australia. It remains to be seen, therefore, depending not only on linguistic but also legal factors, whether the recent development of this linguistic specialism continues its presently upward trajectory.

BILINGUAL AND MULTILINGUAL LEGAL SYSTEMS

In this unit, we examine a number of specific linguistic challenges involved in bilingual and multilingual legal systems. We consider, for example, what makes translation of legal texts particularly difficult, describe cross-cultural communication barriers that exist in the courtroom, and examine how legal meaning is decided for divergent language texts of the same law. Much of the research (and related policy thinking) on which our discussion in this unit is based comes from Canada and the European Union, two of the world's most developed bilingual and multilingual jurisdictions, as well as from international law. But we also show how researchers have become engaged with these topics in other bilingual postcolonial territories, including Malaysia and Hong Kong.

Overcoming obstacles in legal translation

Unit A10 notes the significance of legal translation in multilingual jurisdictions. Here, we analyse why legal translation is a particularly difficult, specialised subfield within translation.

The most widely discussed problem in **legal translation** is that of terminology: lack of equivalent terms and concepts in the target language and culture. As well as situations where concepts (e.g. common-law concepts such as *consideration* or *equity*) are not