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Pop Goes the Academic

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My experience in dialectal fieldwork and the phonetic analysis of speech that had been a necessary skill had from time to time been called on in various ways during my University employment. In 1967 I appeared in what I believe was the first court case in England where voice identification of a suspect was carried out, a telephone hoax caller had been identified and the evidence of an expert witness, myself, was taken into account in finding the man guilty.

The fire brigade in Winchester had recently installed equipment, now universally used for all emergency telephone calls, for recording calls to fires. The fire service was distressed that hoaxers could call fire appliances to non-existent fires and was determined to let people know that measures could be taken to catch offenders. A male voice had been recorded reporting a fire at the home of a woman who had been pestered in various ways by a rejected suitor, and she listened to the voice and suggested the name of a suspect. Her opinion, not being 'expert', was not at that time allowed in court proceedings and if any evidence of a comparison between the caller and the suspect was to be given, it would have to be by an acknowledged person engaged in speech analysis. A local solicitor remembered my work on the *Survey of English Dialects* and asked me if I was prepared to act in the case.

The suspect agreed to read what appeared to be an innocuous passage, a report on the siting of a new fire station, which had, however, been constructed from phrases in the hoax call. This report was recorded, and I was sent two tapes, which were of excellent quality: moreover, the subject was a fluent reader with natural delivery. In retrospect I have to admit that the task was a very much easier one than most of the cases I later worked on. The voice quality was a complete match, the intonation and pitch in many similar phrases were closely matched, the vowel pronunciations and onsets were identical. I asked for a number of local voices to be recorded and sent to me for a general comparison and was able to take phrases and display them on a Kay sonogram printout. I devised an identification comparison of numbered samples

against lettered samples, influenced by American practice which at the time was using 'voice prints' in the same way as one used fingerprints.

I did not accept, and have never accepted since, the notion that a machine printout of any sort was capable of giving an unquestionable identification of a recorded voice against another unknown recording, but the shapes in this case gave great support to the idea that the suspect's voice showed clear similarities with the telephone caller's voice that the other local voices recorded quite lacked. I devised a scale of increasing and decreasing certainty of opinion and appeared in court able to say that I believed, on my experience, that the voice samples were identical. This was not the only evidence presented. The magistrates gave their opinion of guilty, making it known that they absolutely excluded my little printouts and that they had come to a decision from the straightforward evidence given by various witnesses in person.

A local reporter must have put the story on to a national wire service, for every paper next day gave some sort of account, often garbled, of the events of the day and my fame far outstripped my capacity to deal with the suggestions for using my skills which then came in. Many police forces saw this as an opportunity to find out who had made a brief hoax bomb call, although no suspect's recording might be available as a sample. The impression seemed to be that I had a magic way of homing in on an anonymous individual on the evidence of half a dozen words. Sensibly submitted cases came my way from time to time and resolved into two kinds of work. One was to try to identify something of the regional origins of a speaker, perhaps for later use if a potential suspect appeared. The more usual case would repeat the circumstances of the Winchester case, where there was a telephone recording by an unknown to be compared with the voice of a suspect.

From the beginning I made it clear in any Statement of Witness that this work was not to be compared with fingerprinting, but represented a personal opinion which I was able to give because of training and wide experience in the analysis of speech sounds. Oral identification without the use of any electronic analysis was for many years the only evidence. The English confrontational system rapidly found other phoneticians prepared to do similar work, though the general reluctance of academics to display their expertise in the courts led to much expression of opposition to the whole activity.

Over the next few years cases of varying kinds related to voice identification came my way. Academic colleagues such as Dr John Baldwin of UCL and Dr Peter French, a friend of many years who had a post at the College of Ripon and York St John, also took part in cases and the two later collaborated on a book, *Forensic Phonetics*,¹ giving an account of the processes of voice identification.

During the years between my first attempt at forensic voice identification in court and 1983, when I retired from the University, I began to develop a variety of techniques, using recorded tape loops and other instruments in order to select and compare items from multiple recordings. My judgements remained based purely on auditory analysis of the material. I bought equipment of a sophisticated kind to filter and enhance the quality of recordings: the enhancement of recorded material for better interpretation became another of the tasks I was asked to do. Lawyers sought technical help to clarify, if possible, the horrible quality of material on some disputed tapes, though mostly they have never realized that if it is not there in the first place, you cannot invent anything to produce lost words. Enhancement excluding background noise almost always takes out frequencies that are in speech and so alters the speech as to make it unsafe to use for comparison.

The most notable case in those years was that of the 'Yorkshire Ripper'. My own involvement, from the earliest stages, was with a tape sent to the police by a man eventually shown to be a hoaxer but claiming to be a multiple murderer. The same man was certainly the author of a series of letters sent to the police about the murders. My colleague in the then Department of Phonetics at Leeds, Jack Windsor Lewis, worked on the letters, and our involvement with the case was reported fairly accurately in a couple of books published after Peter Sutcliffe was found guilty of the murders.² Jack and I later published our own accounts in a forensic journal.³ The then Chief Constable of West Yorkshire wrote a (to him) profitable account of the case after the trial in a well-known tabloid newspaper in which he suggested that the linguistic experts had let the police down. Since Jack and I had appeared before the same Chief Constable on a notable occasion when we submitted our criticisms of treating letters, tape and murders as a single case, and both suggested that a hoax was involved, we were understandably incensed. Jack wanted to reveal all in a letter to *The Times* and to my present regret I persuaded him that a dignified silence was to be preferred.

In 1983 Leeds, along with all Universities, was forced into drastic financial cuts which could only be achieved by losing staff. I found myself among those who were encouraged to retire early, too early for me to want to give up serious work. Fortunately for me this was the year in which the Police and Criminal Evidence Act was introduced, in which it was laid down that police interviews with suspected criminals should be recorded. This putting on record of everything that took place in the interview room worked to the benefit of suspects and police alike. A further advantage was the accumulation of a great body of evidence of suspects' voices which could be compared with recordings of improper telephone calls of all kinds, as these

too became increasingly available. Naturally this provoked a need for experts to examine and speak on comparisons of these tapes and I rapidly became involved in increasing numbers of commissions for both prosecution and defence.

Around the same time, HM Customs and Excise used the more sophisticated technology becoming available to record telephone conversations from abroad in which the import of illegal drugs was planned. This resulted in more arrests at ports and airports. Later interviews with the carriers, and other people picked up in the course of enquiries, could be compared with the earlier recorded telephone calls. Very complex cases came to be built up around tape recordings of many kinds. Recordings such as those in black boxes from aircraft crashes and others made from sinking ships might be submitted to phoneticians for their advice and help in insurance disputes.

I was asked to work in criminal cases for foreign governments and agencies but refused. I was unwilling to work in environments where my evidence might help to achieve a death penalty and in some countries there was even the possibility that a single piece of evidence could result in a conviction. I was happier when my evidence was supported by, or in support of, additional evidence, as in England.

In the mid-1980s, computer programs for speech analysis with hardware capable of accurately analysing such activities as pitch, and the formant structure of speech events, began to be developed. This meant that a picture of sound frequencies of speech could almost instantly be called up on the computer screen, capable of being viewed, analysed, edited, played back and printed. The computer screen could display waveforms in an editable display of a speech event across the screen that could be adjusted to show from as little as a quarter of a second to as much as five minutes. More recent programs can be installed inside a computer with the addition of a card. At that time it was necessary to use external pieces of 'hardware' comprising an amplifier and a unit that, in the words of the handbook, 'communicates to the outside world via analog and digital inputs and outputs'.⁴

A MacADIOS unit incorporating the MacSpeech Lab was demonstrated to me and I believed that this would help to solve many problems and save enormous amounts of time. Alas, suggestions about the solving of problems came thick and fast and work on one set of problems could produce yet more. Apart from the use of digital selection, saving and handling of segments of speech, I still find aural analysis the most reliable. And John Baldwin has consistently denied the capacity of any computer to make his mind up for him and has continued to restrict himself to the evidence of his own ears.

The Americans were well to the fore in the legal use of recording comparison using computerised analysis. Various states, at one time or another, accepted them as

though they were as reliable as fingerprints. Printout material, similar to the Kay Sonogram material I had used in Winchester, but prepared by technicians without any knowledge of phonetics, was put forward in American courts and claimed to show 'proof' that the voices of a suspect and of an unknown speaker were identical. Great opposition was then roused in American Universities, with various leading speech scientists being prominent in moves to deny this certainty. Oscar Tosi, of Michigan State University, gives a full account of the early disputes over this procedure in American states.⁵

Fortunately, no one in England claimed such expertise for the machine, and the sensible results of an experienced phonetician examining and giving a qualified view on what he heard became more and more accepted. Many early opponents of the whole idea of giving the results of a speech comparison in court were later persuaded by the moderate tone of the proponents that it was proper that voice identification cases should be tried with the inclusion of expert phonetic evidence.

During the 1980s a series of meetings of interested parties was held in York, with increasing numbers of phoneticians attending from the United States and Germany, as well as from other countries. The aim was to bring together phoneticians occupied in solving forensic problems where voice recording was used. A speech analysis unit had been established in the Bundeskriminalamt in Wiesbaden (the German FBI) headed by a distinguished phonetician, Dr (now Professor) Herman Künzel, whose research and publications have been impressive. There are criminal investigation units for speech investigation elsewhere in Germany staffed by leading phoneticians and linguists. Other countries also have units suitable for their legal systems. These annual meetings in York led to the founding of the International Association for Forensic Phonetics, now accepted as a Professional Association, of which Jack Windsor Lewis and I are founder members, Dr Peter French is the Chairman and Professor Künzel is the current President. Many leading phoneticians are members, including Francis Nolan, Head of the Department of Phonetics at Cambridge University, Professor John Lyons, an ex-president, and Professor Peter Ladefoged. Respectability for this new profession is now assured.

From about 1984 my work in the forensic field increased until by 1986 I saw myself as a full-time Forensic Scientist. The Association for Forensic Phonetics provided me with the specialist support of academic colleagues with similar interests. I became a member of the Forensic Science Society, a body which includes lawyers, policemen of all ranks, workers in police and independent laboratories, chemists, and physicists, whose annual meetings are devoted to accounts of work on a wide range of forensic activity which can include such things as cheque fraud and investigation of

insect life in corpses! I enrolled in the Society's panel of experts, whose skills can be called upon by lawyers and police.

At one of the first meetings of the Forensic Science Society I attended, Stuart Kind, Director of the Forensic Science Research Establishment at Aldermaston and later Professor of Forensic Science at Strathclyde University, challenged me, at the end of his presidential address, to demonstrate by an analysis of his speech how I might show where he originated. I was to give a paper later at the meeting on the use of recordings in forensic work and I took up the challenge in my lecture. Fortunately I had made notes on regional peculiarities in the president's speech as he had given his address and I also had with me several slides made from *Survey of English Dialects* material which gave information about items such as the use of the schwa rather than /i/ in unstressed syllables. Not knowing the president personally at that time and not having invented my later response to the stock question, 'Where do I come from then?' (which was, to my wife's disapproval, 'Why, are you lost?') I felt that in the august company of leading chemists, physicists, chief constables and the like I had to make a fist at it. Fortunately, Stuart has enough Nottingham regional characteristics in his present speech to enable me to announce my opinion that he was from that county. I gave visual support from my slides and explained how I came to my decision. From such circumstances, my reputation has grown by leaps and bounds, quite unreasonably in fact.

In 1983 I thought I was an academic. I had worked for the University for thirty-one years and expected to remain an academic for the whole of my working life. I have spent twelve years working in the forensic field, attending courts such as Stoke-on-Trent magistrates' or the Central Criminal Court (the Old Bailey), flying as far afield as Stornoway or Southampton, undertaking rail travel to places like Truro and Bangor and all points between. Having been consulted on probably a couple of thousand occasions, though actual appearances in court are perhaps nearer three hundred, I wonder if I can still see myself as an academic at all. I certainly like to claim that I am, by experience, a Forensic Scientist. In 1995 I officially retired from the work and have notified the Home Office, Lord Chancellor, Crown Prosecution Service, Metropolitan Police Audio Laboratory and a host of police forces and solicitors that I am no longer available for work. I still do about five cases a year of rather specialist examination for a particular police force, though for years I have not been summoned to appear in court.

My admiration for Peter Meredith as academic colleague and friend is so great that I wanted something by me to appear in a volume in his honour and I submit this account of my forensic work as a tribute to him and evidence of my academic

contributions having given way to subjects related more to legal matters. Many years ago when I was doing some broadcasting, interpreting the findings of the *Survey of English Dialects* to a wider public, I was told I was 'something of a pop academic'. Maybe this article proves that I've now become something of a pop forensic scientist.

NOTES

¹ John Baldwin and Peter French, *Forensic Phonetics* (London: Pinter, 1990).

² David A. Yallop, *Deliver us from Evil* (London: MacDonald, 1981). Roger Cross, *The Yorkshire Ripper* (London: Granada, 1981).

³ Stanley Ellis (Part I) Jack Windsor Lewis (Part II), 'Case Reports: The Yorkshire Ripper Enquiry', *Forensic Linguistics: Speech, Language and the Law*, 1 (1994), 197-216.

⁴ Randall S. Hancock, *MacSpeech Lab Manual: Version 2.0* (Cambridge, MA: GW Instruments, 1986), p. 6.

⁵ Oscar Tosi, *Voice Identification: Theory and Legal Applications* (Baltimore: University Park Press, 1979).