

What's Cooking? Research and Developments in Forensic Speech Science

The presentation provides a background to the use of forensic speaker comparison ('voice identification') evidence in UK courts. Established methods of analysis and the speech parameters to which they are applied are considered in terms of their strengths and weakness with some illustrations from real case materials. Two major research projects based in the Department are designed to address and remedy different areas of weakness. The first project¹ seeks, inter alia, to establish long-term acoustic measures that are of high speaker-discriminant value, and examines how their outputs might be integrated with the results of established analytic procedures into an overall conclusion concerning identity/non-identity of speakers. Some emerging results, based on analysis of 100 recordings of Standard Southern British English (SSBE), are presented.

The second project², which begins in January 2016, will examine the degree to which the long term acoustic measures may be accent-independent. This is an important question for forensic speaker comparison because the task involves assessing not just whether the voice in a criminal recording is similar to that of a suspect, but also a 'typicality' assessment, i.e. a determination of the distinctiveness of the features found therein. This assessment should be an empirical exercise involving a background, or reference, population. If the features on which the analysis is based are highly accent-dependent, one would need to assemble a different set of reference recordings for each case. If, however, one can establish measures that are accent-independent, a single reference population could be used for all cases – a great saving of time and resources. Taking the results of long-term acoustic measures established for SSBE by the first project, the second project will apply them to a set of recordings of North Eastern English and examine whether there is greater variation within the two accents than between them.

In addition to presenting the research, the colloquium is seen as an opportunity to introduce forensic developments within the Department more generally. These include the development of specialist CPD courses in forensic speech and audio analysis, CPD courses for expert witnesses of all specialisms on report writing and giving evidence in court, and the incorporation of advanced speech technology into the MSc in Forensic Speech Science.

The presentation concludes by looking at opportunities for wider involvement of staff in forensic developments. Possibilities opened up by the amalgamation with LFA are given particular consideration.

¹ Voice and Identity: Source, Filter, Biometric - AHRC funded

² The use and utility of localised speech forms in determining identity: forensic and sociophonetic perspectives - ESRC funded