

Assessing typicality in forensic voice comparison: how can sociophonetics help? (and how can sociophonetics benefit?)

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In this paper we will talk about how sociophonetics can directly improve the quality of forensic voice evidence in the UK. We will also discuss ways in which sociophonetics can benefit through greater collaboration across disciplines.

What's the problem?

Forensic voice comparison accounts for the majority of work conducted by forensic speech scientists (French & Foulkes 2012). Such cases involve the comparison of an unknown voice (e.g. covert drug deal) with a known voice (e.g. police interview). It is the role of an expert to evaluate the evidence in terms of support for the prosecution and defence. To do this the expert needs to assess not only the similarity between the voices, but also, crucially, the typicality of features in the wider population. This is because strength of evidence is dependent on whether features of the voice are common or rare. Typicality is often assessed based on the experience of the analyst. However, as shown in Ross et al. (2016), there is considerable inter-analyst variability in estimates of the typicality of linguistic features, which raises issues about the reliability of experience-based evidence presented to the courts.

Why is this a problem?

There have been increasing calls for typicality to be assessed in a more robust, replicable, and reliable way (see Morrison 2014). To do this, it is necessary to have up-to-date reference material, such as linguistic descriptions, or corpora of representative speakers which can be used to calculate typicality empirically. A significant hurdle, however, is the current lack of coverage in terms of the range of varieties for which reference data/ information exist. There is also a lack of data which capture the range of potential within-speaker variability across forensically realistic tasks. Furthermore, existing corpora are relatively limited. Corpora collected for sociolinguistic work are often very highly controlled for relevant regional and social factors, but they are usually relatively small and there is currently no UK repository for accessing the data. Corpora collected for automatic speaker recognition have the benefit of containing a considerable number of speakers. However, there are usually limited controls over speaker demographics.

What are the solutions?

We have a number of potential solutions to these issues and we would like to encourage feedback on our proposals. Specifically, we are considering: (i) establishing a set of 'forensic protocols' for researchers to follow when collecting a corpus, (ii) starting a journal for descriptive works on regional and social varieties of British English, and (iii) creating an open-access repository for corpora. We hope that these resources will be useful not just to forensics and sociophonetics, but also to linguistics and phonetics more generally, speech and language therapy, second language acquisition, speech technology, and education amongst other disciplines.

Why bother?

We will discuss a number of mutual benefits of such collaboration for forensics and sociophonetics. Specifically, we will consider the theoretical and practical implications of analysing more forensically realistic data in sociophonetics.

References

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