

# **Assessing different levels of evidence in forensic speaker comparison**

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This paper concerns the debate about the distinction between observations and propositions in forensic inference. Observations about group-level characteristics are commonly used to form a defence proposition, such as the underlined characteristics in the following  $H_d$ : ‘*the criminal speaker was not the defendant, but was another young adult male speaker of Manchester English*’. The inclusion of these types of group-level characteristics is problematic for Hicks *et al* (2015, 2017), as the observations may have evidential value and should therefore be assessed by the expert, not left to the court to interpret. Morrison *et al* (2016, 2017), however, claim that it is entirely necessary for the expert to use these judgements within propositions in order to make accurate and reliable voice comparisons, leaving the court to infer the value of such observations.

We are of the view that group-level observations which can be drawn from the offender sample will have evidential value in the vast majority of forensic voice comparison cases, and that such observations should not necessarily be restricted to broadly-defined regional background and sex. We argue that the value of this group-level evidence must be determined by the expert, not lay people, and should therefore be incorporated in some way into the expert’s analysis and conclusion. **We therefore propose a model for interpreting voice evidence based on two levels: (1) group-level evidence, and (2) individual-level evidence.** The two rely on different underlying assumptions, and the group-level observations can be used to inform the individual-level propositions. However, for the sake of interpretability, it is probably preferable to present only one combined conclusion to the end user.

We intend that the notion of ‘levels of evidence’ will become the default framework for conceptualising voice evidence, rather than the current status quo, where most experts only consider and report on individual-level (2) evidence. However, the implementation of this framework will necessarily be different in every case and will depend on the availability of relevant data; we therefore propose this as a way of thinking about voice evidence, and not a rigid structure in which conclusions should be presented (i.e. this does not preclude making inferences or presenting conclusions in the different ways currently found in forensic speech laboratories).

We discuss example cases which illustrate these issues, including: a ‘typical’ speaker comparison case, cases where group-level evidence might provide the most useful evidence, or where group- and individual-level evidence offer contrasting results. These cases demonstrate that each case is unique, requiring the forensic scientist to be able to respond to relevant information using different sets of propositions, and that there are outstanding questions about how this type of evidence should be framed and presented to the wide range of users of a forensic report. We reiterate that in providing conclusions, the forensic expert must acknowledge that the value of the evidence is dependent on a number of assumptions (propositions and background information) and these assumptions must be made clear and explicit to the user. How best to achieve this, however, is a question which demands much more attention than it receives.

## **References**

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