Expectancy bias and forensic speaker identification

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Scientific research has long recognized the influence that all kinds of bias have on perception. Expectancy bias and the observer's paradox are two of these bias forms that researchers are very well aware of and of which they make sure that they do not interfere with their experiments (Risinger et al., 2002; Rosenthal, 1994). As an example, they take care that the researcher who does the analysis does not know which participant is in which experimental condition. Otherwise, he might unconsciously misinterpret the results.

However, blind methods are not standard practice in forensic research. In forensic research, however, having background information about a case, or about the source of origin of a sample as being evidentiary or reference material, could potentially constitute a risk (Broeders, 2006; Dror, 2006; Dror et al. 2006; Risinger et al., 2002; Saks and Koehler, 2005; Thompson, 2009). Are forensic researchers resistant to expectancy bias and other kinds of biases? Can they ignore context information in order to make their decision purely on the speech samples they analyze?

In this presentation I will present some research that has been done on the effects of bias and context information on forensic experts' analyses and interpretations of results. Furthermore, I will propose a methodology with which we, as forensic speech researchers, could deal with the problem of bias and context information. As an illustration, I will present the 'blind' method used by speech departments of the forensic institutes in the Netherlands.

This method entails that two forensic co-workers are needed, one of whom (P1) handles all incoming information and materials concerning the criminal case at hand, taking care of keeping all information away from the expert (P2) doing the analyses. P1 then constructs an 'evidence line-up' of fragments of the questioned speech material, of the reference material, and of material from one or more foil speaker(s), all numbered and randomly ordered. This 'evidence line-up' is the only thing P2 receives for the first (auditory) analysis. In a second stage, after the blind analysis has been done, relevant information will be given to P2, in order to take the whole variability range of the speakers into account.

This 'blind' method could be applied with acoustic and phonetic methods as well. P1 should handle all information and materials, and deliver the speech materials to P2 without information about status, whether it is questioned or reference material, and if possible, add some foil speaker material to it. All material should be anonymized and presented to P2 in random order. The key is only given after the first conclusions on the basis of phonetic and acoustic measures have been drawn. For the strength of the conclusions, the relevant information can be taken into account.

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