# Cognitive bias in forensic speech science

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Cognitive biases have been shown to have a detrimental effect on those forensic disciplines that rely on human interpretation (see Kassin, Dror & Kukucka, 2013, for a summary). The term *forensic confirmation bias* has been used to encompass a range of psychological processes that have the potential to affect judgements by forensic experts. These include exposure to inculpatory or strongly emotive contextual information, motivational factors (e.g. the desire to catch criminals - Charlton et al., 2010 - or find in favour of a client - Whitman & Koppl, 2010), primacy/order effects, expectancy effects related to frequency of positive outcomes and demographic stereotypes. The effects have been shown to be more damaging in cases where the data are incomplete or difficult to interpret (Dror, Charlton & Péron, 2006; Whitman & Koppl, 2010).

Although aspects of cognitive bias (chiefly priming) have been addressed in respect of forensic transcription/disputed content analysis by Fraser (2003; 2011), there has been relatively limited reflection on the potential for cognitive bias to affect forensic speaker comparison. This is particularly relevant for approaches which encompass subjective interpretation of results (i.e. those which do not rely on a numerical database for assessing strength of evidence).

There are a number of reasons why speech science might be more susceptible to these biases than other forensic disciplines. Unlike other forms of forensic science, such as DNA or toxicology, for example, analysts have a perceptual mechanism for speech and for recognising voices. They therefore might be more prone to early hypothesis-forming leading to the 'tunnel vision' described by Findley and Scott (2006). Moreover, unlike in fields such as DNA or toxicology, where the characteristics of the evidence are opaque to the instructing party, voice samples are likely to be pre-filtered and very different pairs/sets of voices filtered out. The similarity of samples and the incidence of positive results in speaker comparison, therefore, may well be greater than in other fields. Additionally, the prevalence (particularly in the UK) of using police interviews as reference material makes it more difficult to insulate analysts against potentially biasing contextual information about the case.

A number of recommendations for reducing the risk of cognitive bias have been made by psychologists, researchers and practitioners in other disciplines (Whitman & Koppl, 2010; Kassin, Dror & Kukucka, 2013). These include (but are not limited to):

- blind-testing (i.e. with no contextual information);
- testing within a line-up of suspect 'foil' samples;
- working in linear rather than cyclical fashion (from 'crime' to 'known' sample);
- verification by a second expert who is blind of the initial outcome;
- basic training relating to cognitive biases.

As a first step, this poster presentation will consider research concerned with reducing cognitive biases and bring it to bear on forensic speech science. I will be asking attendees and IAFPA members to fill in a questionnaire relating to bias in our field, the aim being to identify and share realistic and effective practices to manage bias.

# References

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