

The speaker in speech – linguistic context in forensic speaker comparisons

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In forensic speaker comparisons, one or more disputed speech samples of an unknown speaker are typically compared to one or more speech samples of a suspect. One concern in such analyses is the effect of phonetic-linguistic context on the speech sounds sampled for comparison; many phonetic studies show that contexts affect the acoustic realization of speech sounds. For example, stressed syllables evoke more canonical pronunciations, utterance-initial speech sounds are typically produced with more effort, and talking over the telephone changes speech behaviour.

To better understand the relevance of these acoustic effects for forensic speaker comparisons, we have been studying how segmental features that characterize speakers' voices depend on what speakers are saying (NWO VIDI project 276-75-010). More specifically, how does the speaker-specificity of speech sounds depend on its direct context (Heeren, 2020, Smorenburg & Heeren, 2020, 2021), on the speech channel (Smorenburg & Heeren, 2022), and on the language spoken (De Boer & Heeren, 2020; De Boer, Quené & Heeren, 2022). In this overview presentation we would like to share some of our main project results obtained on existing research databases (CGN, Oostdijk, 2000; D-LUCEA, Orr & Quené, 2017; WYRED, Gold et al., 2018), and show how our findings are relevant for and translate to forensically-realistic speech data taken from the NFI-FRIDA corpus (Van de Vloed et al., 2020).

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