

# Acoustic correlates of speaker discrimination in English

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This study investigated speaker discrimination in utterances varying in syllable length and speaker gender taken from the TIMIT corpus of American English. Twenty native English speakers presented one-, two-, and three-syllable utterances (within speaker gender) in a two-alternative forced-choice task. Perception results were analyzed in light of both source level ( $F_0$  and long-term average spectrum of LPC residuals) and formant level measurements ( $F_1$ – $F_4$ ). Results showed that male speakers were discriminated better than female speakers. Source features ( $F_0$  and LTAS of LPC residuals) significantly predicted listener response, while higher spectral information ( $F_1$ – $F_4$ ) had little effect. The varying importance of vocal source and vocal tract characteristics in speaker discrimination is discussed.