## ACOUSTICS2008/780 Effects of reverberation on perceptual segregation of competing voices by difference in fundamental frequency

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Three experiments investigated the effect of reverberation on listeners' ability to use the difference in fundamental frequency (F0) between a target and an interfering voice to perceptually separate them. Speech reception thresholds (SRTs) were measured for a monotonized or frequency-modulated male voice against one or two other monotonized or frequency-modulated male voices or against a speech-shaped, pulse train within a virtual room with controlled reverberation. The sources of targets and interferers were always co-located both straight ahead of the listener. In the two first experiments, the beneficial effect of a F0 difference was reduced in reverberation when the target and interferer's F0 were frequency-modulated at 5 Hz. Experiment 3 investigated this interaction between reverberation, a F0 difference and the target and/or interferer F0's modulation: the results highlighted the relevance of the interferer F0's modulation alone in the presence of reverberation. This finding is consistent with the idea that the effect of F0 difference is mediated by a harmonic-cancellation process. The cancellation of the interferer is disrupted by the reverberation only when the interferer's F0 is frequency-modulated, irrespective of the modulation of the target's F0. A frequency-overlap between the F0 of the target and the maskers does not seem a cause of worse impairment in intelligibility.