

## Spatial unmasking of speech in simulated anechoic and reverberant rooms

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Masked speech reception thresholds were measured for a speech source in the presence of a speech-shaped noise masker for simulated anechoic and reverberant listening conditions. Both speech and masker sources were simulated using individualized HRTFs. The HRTFs were measured in a moderately reverberant room ( $T_{60}=450$  ms) for sources at different distances (15, 100, and 200 cm) and directions (straight ahead and directly to the right of the subject). Reverberant simulations were generated using the full HRTFs (including reverberation), while anechoic simulations were generated by time windowing the full HRTFs to create pseudo-anechoic HRTFs. Speech and noise sources were then convolved with the appropriate HRTFs to simulate anechoic and reverberant simulations for different speech and noise configurations. For each spatial configuration, subjects were tested binaurally, monaurally with the “better” ear, and monaurally with the “worse” ear. Speech reception thresholds were measured adaptively, varying the target level while keeping the direct portion of the masker constant at the better ear. Results suggest that speech intelligibility improves and spatial unmasking increases when reverberation is included, at least for some of the tested spatial configurations. However, the binaural contribution to spatial unmasking is generally small and tends to decrease when reverberation is included.

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