3. DIRECT-SOUND TARGET

Reverberation may (Drullman et al., 1994; Bradley et al., 1999) angular separation of target / masker improves. For each spatial configuration, equate T level at M always at (0˚ az, 15 cm distance).

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 spatial and master sources were simulated using individualized HRTFs for each subject. Master sources were centered at (0˚ az, 15 cm) for all conditions and speaker and target azimuths were randomized across the subject. Reverberation 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 combined with the same delay and direct sound interaural level difference as for each subject.

4. BINAURAL ADVANTAGE

Stereoview effect of reverberation on speech waveform modulations (e.g., Houtgast & Steeneken, 1985). Binaural performance equals or is better than monaural left or right ear performance. For T & M are at the same distance, right ear performance is better than left.

Adaptively vary T level to threshold (50% words correct) (Drullman et al., 1999). Runs blocked by condition (random order):

- Left, Right, Binaural x
- Anechoic, Reverberant
- Each cond./config. tested 4x per subject

5. BETTER EAR ADVANTAGE

A significant binaural advantage arises when M & T are in 1) different spatial configurations (panel b) in anechoic or reverberant space and 2) different distances in reverberance (space, panel a).

The better ear advantage decreases with distance as the direct sound interaural level difference decreases. The better ear advantage is greater in reverberance than anechoic space (recall that signals are normalized to direct sound energy at right ear).

6. EFFECT OF TARGET ANGLE

When T & M are both at 0˚ (re: T 0˚ 15 cm) TMRdir re: T 0˚ (dB RMS)

10. REFERENCES

