

ACOUSTICS2008/26 Room-acoustic factors in attentional tracking

Anthony Watkins, Simon Makin and Andrew Raimond
Reading University, Department of Psychology, RG6 6AL Reading, UK

In a 'busy' auditory environment listeners can selectively attend to one of several simultaneous messages by tracking one listener's voice characteristics. Here we ask how well other cues compete for attention with such characteristics, using variations in the spatial position of sound sources in a (virtual) seminar room. Listeners decided which of two simultaneous target words belonged in an attended 'context' phrase when it was played with a simultaneous 'distracter' context that had a different wording. Talker difference was in competition with a position difference, so that the target-word chosen indicates which cue-type the listener was tracking. The main findings are that room-acoustic factors provide some tracking cues, whose salience increases with distance separation. This increase is more prominent in diotic conditions, indicating that these cues are largely monaural. The room-acoustic factors might therefore be the spectral- and temporal-envelope effects of reverberation on the timbre of speech. By contrast, the salience of cues associated with differences in sounds' bearings tends to decrease with distance, and these cues are more effective in dichotic conditions. In other conditions, where a distance and a bearing difference cooperate, they can completely override a talker difference at various distances.