Influence of auditory distraction upon intelligibility ratings in dysarthria M.J. McAuliffe, P.V. Good., G.A. O'Beirne, L.L. LaPointe

Communication exchange occurs under a variety of adverse listening conditions. Research has demonstrated that the intelligibility of both normal and synthesised speech declines significantly in noise; however, it is not currently known if the intelligibility of dysarthric speech is similarly affected.

To investigate the affect of increasing background noise levels on intelligibility, 56 female listeners rated the intelligibility of dysarthric and control speakers under various conditions of auditory distraction including: (1) no noise, (2) +3db signal-to-noise ratio (SNR), (3) 0db SNR, and (4) -3db SNR. Multi-talker babble was digitally mixed with the speech samples of the dysarthric and control speakers to produce the three SNR conditions. Intelligibility was rated using direct magnitude estimation.

Results of the study revealed that the intelligibility ratings of the control group decreased significantly as SNR decreased. Unexpectedly, the intelligibility ratings of the dysarthric group were similar across all conditions of auditory distraction. It is possible that the effort required to attend to the dysarthric speech samples served to obviate the effects of auditory distraction. Alternatively, the findings may reflect a measurement effect with listeners restricted in their ratings due to the overall severity of the dysarthric group.