Effects of Reverberation upon the Perception of Dysarthric Speech P. Dagenais & E. Adams

Audio recordings of speakers with dysarthria are often made using head-mounted microphones. The proximity of the mouth to the microphone may result in elimination of the typical reverberant quality of speech. Naturally occurring reverberation can reduce speech intelligibility while the speech may sound more natural to listeners. Thus, using head mounted microphones may result in evaluations of speech abilities that do not reflect a patient's abilities in typical communicative situations. This study examined the speech of four speakers with dysarthria whose speech was varied from a non-reverberant condition to two reverberant conditions: a natural level and an excessive level. Intelligibility (percent correct words identified), an objective measure, and Acceptability ("How would you rate this person's speaking skills?"), a subjective measure, were obtained using 30 normal young adults. Intelligibility ratings showed differences between speakers and differences between reverberant conditions for two of the four speakers. The non-reverberant condition resulted in the highest intelligibility ratings. Acceptability ratings showed differences between speakers but not across reverberant conditions. Moderate significant correlations were found between Acceptability and Intelligibility ratings for the two mid-range speakers with dysarthria. Suggestions are made for recording techniques used to assess the speech status of persons with dysarthria.