Duration and Variability in Speakers with Dysarthria and Traumatic Brain Injury S. Fager, D. Beukelman, T. Jakobs

This investigation was related to a larger project to develop speech recognition (SR) technology for people with dysarthria. This study investigated the durations of single words and sound types with acoustic analysis as well as the variability of word durations of ten participants with dysarthria due to Traumatic Brain Injury (TBI) and ten control participants. The study also examined the relationships between word intelligibility and word duration and word intelligibility and variability for the participants with TBI. Results indicated statistically significant differences on word and sound type durations between the dysarthric and control participants. Specifically, a pattern of doubling or near-doubling of durations was consistent across word and sound type durations. While differences existed in standard deviations, the coefficient of variability was similar between dysarthric and control speakers. There was no correlation between word intelligibility and word duration or word intelligibility and variability. Implications for SR technology development based on the study's findings will be discussed.