

## Articulatory Working Space as a Kinematic Target in Augmented Feedback Applications

Kearney, E., Yunusova, Y., Haworth, M. B., Faloutsos, P., & Baljko, M.

There is limited literature examining theoretically-established speech motor targets for the remediation of speech disorders using augmented visual feedback (Katz, Bharadwaj & Carstens, 1999; Katz, McNeil & Garst, 2010). This study examines the Articulatory Working Space (AWS) and its variations as a potential therapeutic target. It has previously been shown that the acoustic vowel space increases in clear speech and results in improved speech intelligibility (Bradlow, Kraus & Hayes, 2003; Ferguson & Kewley-Port, 2007). 20 healthy adults (aged >60 years) read the *Grandfather Passage* at normal, clear, slow and fast rate/ style of speech. Tongue movements were recorded using the Wave, an electromagnetic system used to capture articulatory trajectories in real time. The AWS was determined for each repetition of the passage. The results indicate that changing speaking style has an impact on AWS, with clear speech eliciting a greater AWS than normal speech and slow speech eliciting a larger AWS than fast speech. This variation in AWS across speaking conditions suggests that speakers may be able to learn to control AWS if feedback about the size of AWS is provided.