Spatial and temporal variability of speech gestures during fast syllable repetition in Parkinson's disease: an EMA study

Jidde Jacobi

Abstract

Fast syllable repetition tasks are commonly used in the assessment of speech disorders in PD. In such tasks, subjects are often asked to repeat mono-syllables such as /pa/ as fast as possible. Previous studies have demonstrated that some individuals with PD show atypical temporal patterns, such as lower or higher syllable repetition rates, in comparison to typical speakers. The goal of the present study was to replicate these findings and, additionally, to examine spatial accuracy, as well as the relationship between temporal and spatial accuracy. In order to do so, we acquired kinematic speech data using electromagnetic articulography (EMA) during a fast syllable repetition task that was performed by both individuals with PD and typical speakers. Our results show higher temporal variability, and an atypical relationship between temporal performance and spatial accuracy in PD speech. We suggest that this may be due to a deficient speech-motor regulation mechanism.

Bio

Jidde Jacobi works as a PhD student at both the University of Groningen and Macquarie University (Sydney). His research focuses on speech difficulties, namely discoordination of speech gestures, as a result of Parkinson's disease. By means of electromagnetic articulography he studies the articulatory trajectories of the tongue, lips and jaw in speech of individuals with PD. The project is funded by both the University of Groningen and Macquarie University. This project is supervised by dr. Michael Proctor, prof. dr. Ben Maassen, dr. Roel Jonkers and prof. dr. Martijn Wieling.