

Effects of Speaking Rate on Language Processing in Children with Hearing Loss

Rosanne Abrahamse¹, Titia Benders, Katherine Demuth and Nan Xu Rattanasone

¹Department of Linguistics, Macquarie University, Sydney, Australia

The speech we hear in real life can be spoken at different speaking rates. Faster rates may contain altered or reduced acoustic cues, and may leave the listener with less time to process speech [1]. The abilities of children with hearing loss (HL) to process fast speech may be impacted as they receive degraded spoken language input through their hearing devices. Such processing delays have indeed been reported for normal-hearing (NH) children listening in noise as well as elderly populations with varying hearing levels [2], [3]. The current study thus compared the effects of fast vs. normal speech on sentence processing in children with HL and their NH peers.

This talk will present data from 40 7-12-year-olds with HL, wearing hearing aids, cochlear implants or both, and 33 7-12-year olds with NH. The children all completed an Auditory Word Detection Task (AWD) online, where they were asked to listen for a target word in a sentence and press the spacebar upon hearing it. Response time (RT) was taken as a measure of processing speed and was compared across sentences presented at naturally produced Normal (4.4 syllables/second) vs. Fast speaking rates (6.1 s/s). The potential role that vocabulary size and working memory capacity might play in fast speech processing was also explored.

Investigating whether language processing in school-aged children with HL is affected by faster speaking rates is an important step forward in understanding which listening conditions in everyday environments, such as the classroom, are challenging for children with HL. Outcomes and implications for the communicative abilities of children with HL will be discussed.

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