Subject-Verb Agreement, Prediction and Hearing Loss

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Predicting upcoming words facilitates rapid language comprehension. From age two, children with normal hearing (NH) can predict using a range of cues, such as subject-verb (SV) agreement. However, little is known about children with hearing loss (HL), who can experience prolonged difficulty producing and comprehending plural morphology, which is crucial for SV agreement. We therefore investigated prediction using SV agreement in children with HL using an eye-tracking task.

Children with HL (N=25; M_{age}=9;9) and NH (N=30; M_{age}=9;6) saw trials consisting of two pictures of different familiar animals, one solitary (singular target) and one as a group of five (plural target). Children heard sentences that either made the target animal predictable through SV agreement ("*is/are the wallawallamoony duck(s) quacking*") or unpredictable ("*see the wallawallamoony duck(s) quacking*"). Logistic curves were fit to the proportion of looks to target for each participant, number and condition. Crossover points (indicating the timing of looks to target) were analysed using a linear mixed-effects model. Fixed factors and interactions (references underlined) were Group (NH/HL) Predictability (predictable/unpredictable) and Number (singular/plural).

A significant effect was found for Predictability (β=-54.70, p<.001), with two-way interactions between Predictability and Number (β=50.89, p<.001) and Predictability and Group (β=25.76, p<.01) and a three-way interaction (β=-33.37, p<.01). Post hoc analyses showed neither group predicted during the singular trials, but both predicted during plural trials (NH: p<.001; HL: p<.01). However, the NH group was faster than the HL group (p<.001).

Thus, school-aged children with HL can predict using SV agreement, even if slightly slower than their NH peers. This raises questions about other types of syntactic prediction they can use, such as 3rd person singular (e.g., they walk/she walks), which is also known to be challenging for this population. These results may inform future interventions focused on helping children with HL process spoken language more efficiently.