Word-level stress processing in infants and toddlers

Ulrike Schild, Jessica N. Steil & Claudia K. Friedrich

University of Tuebingen, Germany

Syllable stress can help to distinguish words in a variable-stress language like German. Adult native listeners of German make use of this stress information in word comprehension. Here, we asked whether already language learners use syllable stress for identifying words. We recorded looking times during a looking-while-listening task from infants (4 to 15-month-olds, N 69) and toddlers (2.5 to 4 year-olds, N 28). Participants saw displays of two pictures (e.g., a car and a baby) while hearing a spoken noun referring to one of both objects (target). The disyllabic noun was either correctly stressed on the first syllable (“BAby"), or it was incorrectly stressed on the second syllable (“baBY”). Infants did not show robust evidence for label-object associations. They did not reliably fixate the named target more than the other object (distractor). This replicates previous failures to show word comprehension in this young age group. By-item analysis of the infant data pointed to more fixations towards the target when presented with the correctly stressed noun. However, this was not confirmed by by-participant analysis. Toddlers showed robust word comprehension. Across both conditions, they fixated the named target more than the distractor. Moreover, toddlers were sensitive to the prosodic modulation. They reliably looked more to the target when presented with the correctly stressed noun than when presented with the incorrectly stressed noun. In sum, our results show restricted replicability of word comprehension in infants but revealed a trend that first word representations in German-learning infants might be already specified for syllable stress. Toddlers show robust processing of stress cues on word-level.