

Evidence of word segmentation abilities in German-learning 5-to-6-month-olds

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To learn new words, infants must first determine where words begin and end in continuous speech. Infants start extracting words from fluent speech between 6 and 7.5 months of age (in English, Jusczyk & Aslin, 1995). Like their English- and Dutch-learning peers (Jusczyk et al., 1999; Houston et al., 2000; Kuijpers et al., 1998; Kooijman et al., 2009), German-learning infants show a listening preference for trochaic over iambic words by 6 months (Höhle et al., 2009) and are able to segment words from a speech stream following the trochaic stress pattern of their native language (Marimon et al., 2022; Höhle & Weissenborn, 2003). In this study, we used pupil dilation to investigate German-learning infants' ability to segment bisyllabic nonce words from natural speech. We tested German-learning 5- to 6-month-olds ($n = 14$, target $N = 30$) in a central fixation paradigm with eye-tracking. Infants were familiarized with passages containing two nonce words used as verbs (e.g., *rieken* /ri:kən/, *pahlen* /pa:lən/) until they had accumulated 45 s of listening time to each. Then they were tested on four isolated words: two familiar (*rieken*, *pahlen*) and two novel (*wühnen* /wy:nən/, *tuhpen* /tu:pen/). Preliminary results show that while the difference in looking time between novel vs. familiar test trials was not significant ($p = .88$), infants pupils did dilate significantly more to novel than to familiar words at test ($p < .01$). Our results provide the earliest evidence of bisyllabic word segmentation in German-learning infants (5-6 months of age) from natural speech passages using pupil dilation - which we find is a more sensitive measure to index infants' segmentation abilities compared to the traditional measures based on looking time.