

Word segmentation in bilingual infants acquiring rhythmically different languages

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Speech segmentation is a major challenge in first language acquisition due to the continuous nature of spoken language. Prosody has been shown to facilitate word segmentation in infants (Jusczyk et al., 1999), though the use of prosodic cues is language-specific (Polka & Sundara, 2012). Infants growing up bilingually thus face a distinct challenge, as word-level prosody differs across languages. Using electrophysiology, we here ask, how bilingual infants segment words from rhythmically different native languages that may require language-specific adjustments of segmentation procedures (Polka et al., 2017). In an event-related brain potential (ERP) study with 9-month-old German-French bilinguals (n=36), we evaluated infants' segmentation of bi-syllabic words in both native languages. German and French are particularly interesting due to their different rhythmic characteristics, with German having lexical stress and French lacking lexical stress. For each language (with counterbalanced order), infants were familiarized with text passages and then tested with a list of familiarized and non-familiarized words. Differences in ERP responses to test words would indicate infants' recognition of familiarized words and their segmentation from sentences during familiarization. Infants showed more negative-going ERP responses to familiarized versus unfamiliarized words for both languages ($p < .001$), indicating bilinguals' abilities of word segmentation across rhythmically different languages. In addition, preliminary ERP results suggest cross-linguistic differences in infants' word segmentation based on language dominance. In conclusion, the current study provides evidence that bilingual infants are similarly able to segment words from continuous speech across rhythmically different languages and that these abilities develop in a comparable way to monolingual language learners (see Jusczyk et al., 1999; Houston et al., 2000; Höhle, 2002; Männel & Friederici, 2013).