To effectively build a vocabulary, infants need to apply their refined phonetic sensitivities to word learning, distinguishing between similar sounding words like “key” and “tea.” Yet, infants have difficulty learning minimal pairs in laboratory word-learning tasks up until 17 months of age (Werker, Fennell, Corcoran & Stager, 2002). Research has shown that infants perform better when given additional perceptual cues (e.g., acoustically salient contrasts; Curtin, Fennell, & Escudero, 2009). This study explores the link between the additional perceptual cue of lexical stress and infants’ detection of phonological changes in newly learned words. Lexical stress is defined as acoustic emphasis on a syllable within a word, marked by an increased intensity, frequency, and/or duration. Stress patterns can differ across languages. In French, stress is usually placed on the last syllable in a sentence, whereas in English it is generally placed on the first syllable of every word. Previous results suggest that 20- to 24-month-old English-learners differentiate phonemic changes more easily in stressed than unstressed syllables, regardless of whether the stress was syllable-initial or final (Floccia, Nazzi, Austin, Arreckx, & Gosselin, 2011). To date, no research has investigated the interplay between lexical stress and phonological discrimination in bilingual infants, or in unilingual infants under 20 months. The inclusion of bilinguals is of interest as they may have to cope with two different stress patterns (e.g., English and French).

In the task, French-English bilingual (N = 32) and English unilingual (N = 32) 17- and 20-month-old infants were habituated to two novel object-word pairings (bina – Object A; lato – Object B). Half the participants were presented with stress-initial stimuli (Blina, Lato), half to stress-final (biNA, laTO). At test, infants saw both objects from habituation simultaneously and heard one of the object labels. Infants heard a correct pronunciation of a target word (bina, lato) in four test trials and an incorrect pronunciation in the other four (dina, lako). Thus, all infants heard mispronunciations on both stressed and unstressed syllables. Our dependent measure was proportion looking to the target object (the labeled object was still considered the target if it was incorrectly pronounced). Overall, 17-month-old unilinguals looked longer at the target over distractor, regardless of whether its label was correctly or incorrectly pronounced. However, 20-month-old unilinguals looked significantly less at the target when the mispronunciation occurred in an initial-stressed word. Bilinguals looked significantly longer at target when hearing its label correctly pronounced, in both stressed and unstressed syllables and in both age groups. However, this effect was strongest with final-stressed words.

Thus, similar to Floccia, et al. (2011), English-learning infants’ detailed use of phonemic information appears to be aided by syllable stress at this younger age. Further, there appears to be a bilingual advantage, as only infants learning two languages detected mispronunciations in both unstressed and stressed syllables. This may be due to bilinguals’ enhanced cognitive control (Kovács & Mehler, 2009); they can inhibit looking to target when the word is mispronounced. Bilinguals’ last-syllable advantage may be due to their French exposure, a language with final syllable stress. Interestingly, a close examination of the timing of infants’ looks to the target revealed that unilinguals looked significantly more at the target when it was correctly pronounced than when it was
mispronounced only in the first 2000 ms proceeding the target phonological contrast, whereas the bilinguals continue to look more at the target throughout the trial. A discussion will be held on the possible implications of these attentional differences between the linguistic groups.
References


