The perception of stress patterns by Spanish and Catalan infants

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To acquire a vocabulary, infants have to parse the speech input in an appropriate way so that possible word forms can be first identified and later on mapped onto meanings, matching the lexicon of the language. An ability that infants may bring to bear on early word segmentation is a statistical learning mechanism (Saffran, Aslin, & Newport, 1996). However, in a natural environment, the speech stream contains multiple redundant cues to word boundaries, including not only statistical regularities, but also word stress markers, phonotactic constraints and context-sensitive allophonic cues. Previous research with English-learning infants has shown that stress cues can have a powerful influence on early word segmentation. English rhythmic structure is predominantly trochaic. In a corpus study, Cutler and Carter (1987) found that approximately 90% of English content words began with a stressed syllable; therefore attempting lexical access at each strong syllable would be a highly successful strategy. Jusczyk, Cutler and Redanz (1993) observed that nine-month-old American infants, but not six-month-olds, showed a bias toward trochees, preferring to listen to lists of strong/weak disyllabic words, as opposed to lists of disyllabic iambs. Infants’ knowledge of the predominant stress pattern in their language would also be indicating the use of this cue for speech segmentation. By 7½ months of age infants have been shown to perceive stressed syllables as markers of word onsets (Jusczyk, Houston & Newsome, 1999).

Ongoing research in two Romance languages, Catalan and Spanish, has addressed the study of infants’ preferential patterns and discrimination abilities for trochaic vs. iambic word forms. These two languages differ from English in the type of predominant word shapes and in the frequency of the different stress patterns. Most frequent word shape in Spanish is disyllabic, but only 70% of disyllabic words begin with a stressed syllable (Alcina & Blecua, 1975). Catalan is also prosodically trochaic, but it differs from Spanish in the presence of a higher quantity of monosyllabic words, and it differs from both English and Spanish in the frequency of disyllabic iambs (Prieto, 2004). A first experiment was run to analyze infants’ capacity to discriminate between trochaic and iambic disyllabic word shapes. Once this ability had been confirmed in nine-month-old infants, a second series of experiments were run to explore the stress pattern preferences of Catalan-learning and Spanish-learning infants, at two different age levels (6 and 9 months), using the head-turn preference procedure. While no preference was predicted in the younger groups, a trochaic preference was expected to be found by 9 months of age, in spite of the above mentioned differences between English and the two Romance languages under study. However, results indicated that neither 6 month-old nor 9 month-old Catalan and Spanish infants showed a preference for the trochaic pattern. These results seem to indicate that infants exposed to languages with a less predominant stress pattern may not develop a clear sensitivity for thismetrical property and, consequently, may not use this type of cue for word segmentation purposes. An additional experiment is currently being run to further analyze this issue, exploring the link between stress pattern and syllabic structure.
References:


