Acoustic Evidence of Prosodic Development

Katherine Demuth
Brown University

Recent research on the acquisition of phonology has increasingly begun to explore the learning of structures above the level of the segment (e.g., syllable structure, prosodic word structure, and interactions at the phonology/morphology interface). This has been made possible through the recent collection and annotation of longitudinal spontaneous speech corpora between the ages of 1 and 2 - a time when much early phonological development takes place. Researchers have long noted, however, that assessing children's productions using impressionistic methods may underestimate their knowledge of language (e.g., Macken & Barton, 1980; Scobbie, et al., 2000). In this talk we discuss preliminary results from acoustic studies of children's early speech productions, addressing two recently debated issues in the field.

The first study explores children's awareness of English word-minimality constraints, an issue that has been reported, though no previous acoustic studies have been done. The findings indicate that at least some children exhibit an early awareness of these constraints, showing compensatory vowel lengthening on lax, but not tense vowels when word-final coda consonants are omitted. The second study follows up on crosslinguistic research showing that determiners are first used when they can be prosodified as part of a disyllabic foot. However, the results show that this does not happen until the age of 2 in English. Acoustic analysis finds that prosodic reorganization has taken place by 2, suggesting that learners are beginning to develop some adult-like prosodic representations at this point.

Taken together these results provide further support for the notion the acquisition of some aspects of both syllable structure and grammatical morphemes may be closely tied to developments in prosodic structure. This points to the need for a more integrated approach to problems of language learning, and to the need for a comprehensive developmental model of language production.