On phrasal organization and jaw opening. Donna Erickson, Department of International Cultural Studies, Gifu City Women’s College, Gifu, Japan. [Full Paper Available on CD]

This study examines some intonational and rhythmical aspects of speech and their interactions. The intonational analysis framework is the ToBi system; the rhythmical analysis framework is based on patterns of jaw opening acoustically reflected by F2-F1 changes. According to recent studies on American English, contrastively emphasized mono-syllabic words, regardless of vowel height, have larger jaw opening than the same non-emphasized words in corresponding utterances without emphasis. The findings of a relation between syllable prominence and jaw opening (regardless of vowel height) have suggested the jaw may be a “rhythm articulator” for spoken American English utterances. In order to further investigate the role of the jaw in articulating utterance rhythm, this study examines 9 repetitions of 4-utterance types containing 7 syllables produced with the vowel /aɪ/, in which one (or none) of the 7 syllables was spoken with contrastive emphasis. Jaw opening measurements were made at the time of maximum jaw opening during the syllable. Acoustic measurements of peak F0 in the syllable, F1 and F2 values at time of maximum jaw opening, and syllable duration were also made for the target syllables. In addition, ToBI analysis of boundary strength and pitch accents were made for each of the utterances. The results of the study suggest a hierarchy of organization of jaw opening related to the syntactic phrasal organization characteristics of the utterance which may be different from the intonational pitch accent/ boundary strength organization of the utterance.