A cross-linguistic investigation of information structure in infant-directed speech

Kristine M. Yu (UMD College Park, UMASS Amherst), Sameer ud Dowla Khan (Brown University), Megha Sundara (UCLA)

Abstract

- Cross-linguistically, infant-directed speech (IDS) (e.g. Blount & Padgug 1977; Fernald & Simon 1984, Griesser & Kuhl 1988, Fernald et al. 1989, Kitamura et al. 2002, Liu et al. 2007) shows prosodic phonetic modifications such as an expanded pitch range
- Hypothesis: prosodic modifications in IDS consistent not only with engaging the infant’s attention, but also with signaling information structure relevant for IDS
- Cross-linguistic analysis in Bengali and English to tease apart language-specific prosodic correlates of information structure from global prosodic modifications
- Focus on phonological intonational analysis to index information structure

Information structure via intonational phonology

- Reliance on previous work on Bengali (Khan 2008; to appear) and English (e.g. Beckman and Ayers Elam 1993, Pierrehumbert and Hirschberg 1990) ToBI in non-IDS speech linking language-specific ToBI intonational categories and information structure

Bengali

- L*... Ha: default pattern of successive rises (see fig, below)
- L*+F H and H* mark focus/surprise
- Boundary tones include default L%, topicalized HL%, etc.
- Successive L*... Ha rises in Bengali lab speech (Khan 2008)

English

- H*: default marker of salience in discourse
- L+H* and L*+H markers of focus/surprise
- Boundary tone inventory less rich than in Bengali

Materials and Methods

- Speakers and speech materials
  - 10 speakers for each language (5M/5F)
  - Parents of young infants/children
  - Speech materials: North Wind passage—Aesop’s fable
  - Standard language sample with controlled pragmatic context across languages
  - Suitable for laboratory speech and IDS elicitation

Results: changes in information structure in IDS

- Parents also made language-specific prosodic modifications consistent with increase in topicalization, focus in IDS

Results: prosodic modifications for engaging listener’s attention

- In both languages, parents reduced regularity of patterns of pitch variation in IDS

Conclusions

- IDS prosody showed language-specific modifications that both engage the listener and reflect the information structure relevant to IDS

- Reduction in regularity of language-specific pitch variation in IDS consistent with communicative goal of engaging infant’s attention
- Increase in language-specific intonational phonological units known to mark focus/surprise and topicalization

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