Development of Infant-Directed Speech Categorization: Effects of Facial-Vocal Synchrony
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Introduction

- Infant-directed speech (IDS) is a specialized speech register used by adults and children when speaking to infants- IDS has higher mean fundamental frequency (F0), broader F0 range, repetition of phrases and prosodic patterns, hyper-articulated vowels and simpler syntax than adult-directed speech (ADS)
- Acoustic properties of IDS vary with pragmatic context, communicative intent, and affect
  - Approving IDS: High F0, variable bell-shaped pitch contours
  - Comforting IDS: Low F0, flat pitch contours
- Functions of IDS for infants (Fernald, 1992)
  1) To modulate infant attention and affect
  2) To communicate caregiver intent and meaning
  3) To exaggerate phonetic, and linguistic structure
- For IDS to communicate meaning, infants must categorize IDS utterances that convey distinct classes of communicative intent
- Categorization: exemplars within a class are treated as functionally equivalent yet discriminated from exemplars of other classes (Bosch, Menso, Gray, Johnson & Boysen-Beamer, 1976)
- If pre-verbal infants categorize IDS, they may begin to extract meaning from speech without word comprehension

Background and Aims

- Previous research of IDS categorization by preverbal infants has found different results as a function of age and stimulus infants view while hearing IDS.
- What is the role of synchrony in categorization of IDS at 4 and 6 months of age?
  - Experiment 1: Natural synchronous IDS
  - Experiment 2: Nonsynchronous facial-vocal IDS
  - Same communicative intent, different utterances in face and voice (e.g., comfort 1 vocal, comfort 2 face)
- Experiment 3: Nonsynchronous facial-visual IDS
  - Communicate caregiver intent and meaning (Fernald, 1992)
  - Infants’ preferences at different ages also mirror mothers’ usage (Kitamura & Lam, 2009)

Methods

Participants:
- 4-month-olds: N = 20; M = 123.60 days old; Range = 104 – 138 days
- 6-month-olds: N = 20; M = 181.15 days old; Range = 165 – 192 days

Stimuli:
- 40 videos taken from 10 female talkers, each producing 2 comforting and 2 approving utterances.

Procedure:
- Each infant sat on parent’s lap approximately 1 meter from 60” Sony HDTV
- Nonsynchronous: Mismatch in intent category and utterances
  - Infant-directed speech (IDS) is a specialized speech register used by adults and children when speaking to infants- IDS has higher mean fundamental frequency (F0), broader F0 range, repetition of phrases and prosodic patterns, hyper-articulated vowels and simpler syntax than adult-directed speech (ADS)
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Results:
- 6-, but not 4-month-old infants categorized approving and comforting IDS
- No support for categorization was found.

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