

Multimodal motherese in Israeli sign language (ISL)

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Introduction

Motherese is a multimodal phenomenon; hearing caregivers modify their speech (use relatively short utterances, slow speech articulation and exaggerated intonation), movements and gesture input when addressing infants (Brand et al., 2002; Rader & Zukow-Goldring, 2010; Iverson et al., 1999). Deaf caregivers also modify their input when interacting with infants. The major types of phonetic modifications observed in infant-directed signing are: displacement, repetition, lengthening and enlargement (Holzrichter, & Meier, 2000). And yet, signed languages are iconic languages. Very few studies have investigated whether deaf parents enhance forms' iconicity to facilitate their infants' form-meaning mapping in the early periods of signed language acquisition.

Research goals

To examine whether parents enhance the iconicity of the lexical forms they address to infants or whether they seek to clarify the iconic basis of the signed words. If so, then: to describe depicting semiotic actions that deaf mothers use in order to ease their hearing infants' form-meaning mapping in the early periods of signed language acquisition.

Research population

Two deaf mothers interacting with their hearing infants.

Research methodology

A longitudinal case study followed two hearing infants' bimodal bilingual acquisition of ISL and Hebrew from the age of 10 to 40 months. In the current study, once every two months (between the age of 10 and 32 months) we analyzed the input the mothers directed to their infants.

Method

Data coding

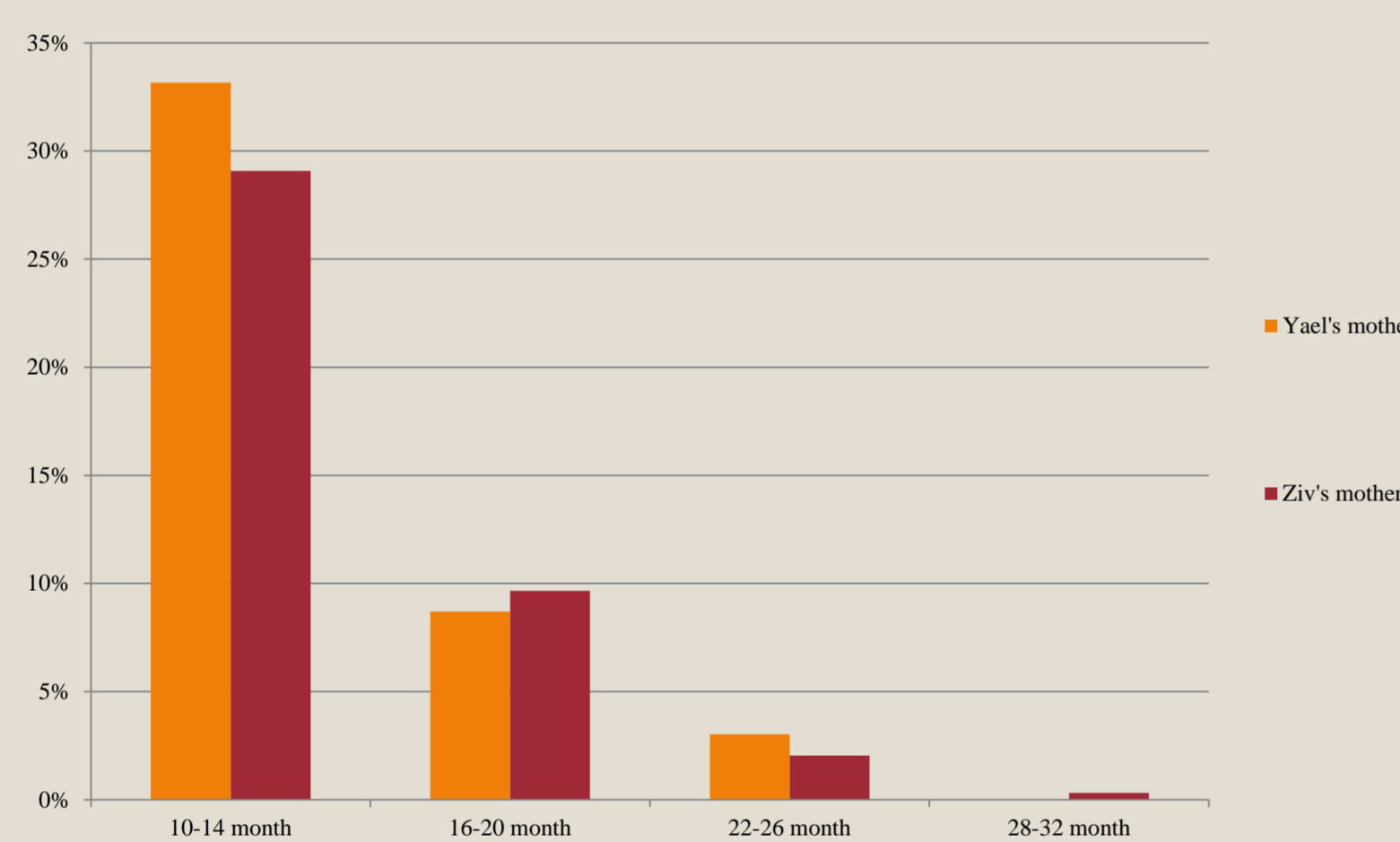
- Each of the signed production was coded as either regular production, a production which had undergone manual phonetic modification (i.e., displacement, multiple repetition, enlargement etc.), or as a production which had undergone iconic modification (i.e. a form produced in pantomimic manner with non-obligatory corporal, facial, mouth or vocal mimetic iconic actions).
- The analyzed sessions were grouped to four timeframe groups according to the timetable of the children's early language development: end of the pre-linguistic communication period - beginning of one word period/mid one-word period/end of one-word period/early syntax developmental period.

Results

Two types of infant-directed modifications were observed - each of which was more prominent in different periods of the infants' early signed language acquisition:

Type 1: Infant-directed content-less phonetic modifications (repetition, displacement etc.)

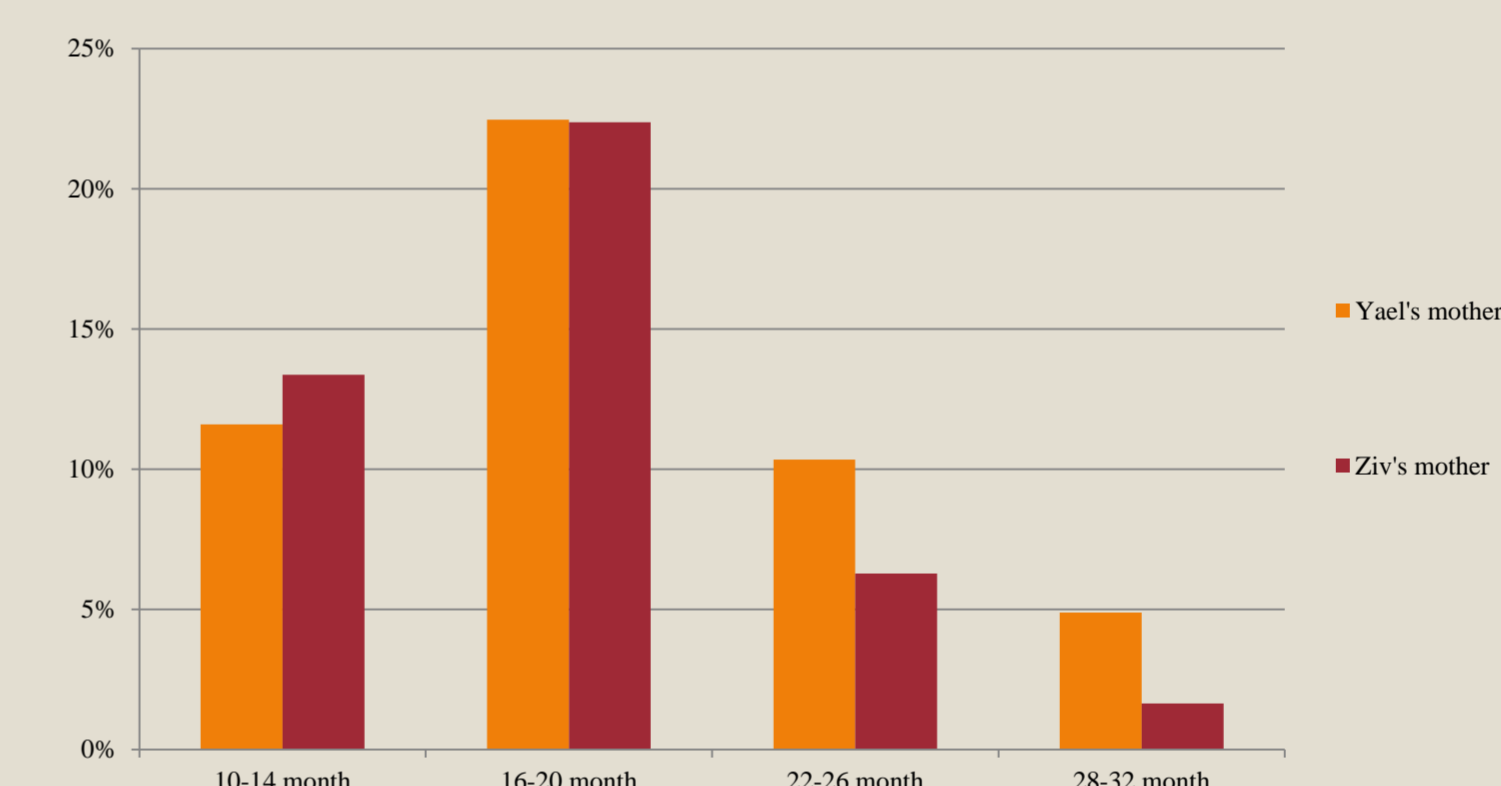
- Employed more frequently at the beginning of the one-word period.
- Aimed to enhance the 'visibility' of the signed forms and attract infants' attention to these communicative actions.



Content-less phonetic modifications applied by each mother in each observed period

Type 2: Infant-directed exaggeratedly iconic modifications (pantomimic signing)

- Employed more frequently during mid-one-word period than in other periods.
- Pantomimic utterances were frequently multimodal; co-articulated with non-obligatory iconic vocal and/or mouth mimetic actions (e.g., animal or object' sounds, human sounds - snoring, whistle, sniffing...).
- Non-obligatory mimetic actions employed to enhance the iconicity of the lexical forms.



Infant-directed exaggeratedly iconic modifications applied by each mother in each observed period

Examples of infant-directed content-less phonetic modifications



CAR; Displacement

CAR; Enlargement + Repetition

Examples of infant-directed exaggeratedly iconic modifications



CAR; realized in more pantomimic manner (with large movements + non-obligatory bodily and mouth mimetic actions)



Regular production: the form CAR

Examples of multimodal pantomimic motherese



CROCODILE; realized with modified handshape and non-obligatory teeth chattering action.



TO SLEEP; lengthen and realized with non-obligatory closing eyes action and sounded action of snoring.



TO SHOUT; realized with exaggeratedly large movement and non-obligatory vocal action mimicking shouting.



FLOWER; realized with unspecified path movement and non-obligatory exaggeratedly sounded sniffing mimicking action.

Discussion

- Deaf caregivers are sensitive to the type of infant-directed modifications, which they believe their children need and are ready for in different periods of language acquisition.
- Our results support recent claims that iconicity may play a role in signed language acquisition (Perniss et al. (2017): deaf parents intensively use varied depicting actions to boost word learning in early vocabulary development.
- Parental 'revitalization' of the iconic basis of the forms may serve as scaffolding allowing their child to establish links to the more conventional version of the forms.