The Swedish MINT Project – modelling infant language acquisition from parent-child interaction

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Summary
The MINT project is a longitudinal study of verbal and nonverbal interaction between 73 Swedish children and their parents, recorded in lab environment from 3 months to 3 years of age. The overall goal of the project is to deepen our understanding of how language acquisition takes place in a multimodal and interactional framework.

Goals and aims
- The goal is to reach a better understanding of the role played by different modalities in the language acquisition process, and to further understand the relation between modalities in parent-child interactions.
- To build a multimodal database for Swedish children in the ages 0.3-3.0.
- To use the knowledge gained to model the language acquisition process.

Research questions
- What roles do different modalities play in interaction between child and parent?
- What are the differences and commonalities within the group of children/parents as for e.g., interactional style; pace of development; relation between language and external values (non-verbal cognition; SECIDI; SES; background; etc)?
- relations within language (semantics; pragmatics; syntactic development; etc)?

Project design

Subjects and data
Subjects
- 83 subjects (Nov 2013) – 73 subjects (Nov 2015)
- 41 boys & 32 girls; 2 twin couples; about 15 bi- or multilingual
- Non-probability sample (interested parents among 2000 randomly selected)

Data collection
- Child and parent in focus
- Longitudinal: ages 0.3-3.0; every third month

Background data
- Family situation (marital status; income; educational level; siblings; child care situation; etc)
- Health situation (otitis; hearing; motoric development; other issues)
- Language (languages in the family; dyslexia in the family; etc)

Behavioral Data
- Vocal, verbal, gesture, gaze, touch, activity, etc
- Semi-structured test of joint attention, turn-taking, non-prompted and prompted imitation

Additional Data
- Swedish CDI (ages 0.9-3.0; every third month; online survey)
- Parents’ understanding of communicative aspects (online survey)

A session in the lab
Free interaction (appx. 10-15 min)
- Target objects: Mo, Na and Li
- A few toys (car, clothes to Mo, Na and Li, cups, cow family)
- “Book” (drawings of airplane, bucket, umbrella, etc)
- Suggestions for rhymes and gestures (up to age 0.9)

Test leader plays with child (appx. 5-10 min, from age 1.0)
- Set-up 1, ages 1.0-1.9: non-prompted imitation of block building; ramping with blocks; put blocks in box; find block; age 2.0: prompted imitation
- Set-up 2, ages 2.0-2.6: non-prompted role play including parent, test leader and dolls
- Set-up 3, ages 2.9-3.0; prompted role play

Coding of behavioral and contextual constituents in free interaction
vocal/verbal
- Orthographic transcription; controlled vocabulary (CV) for children until age 0.9
- Symbols for specifics: repetitions; adult-directed speech; ingressive speech; formulaic speech; distorted speech; whispering; ungrammatical/unsemantic speech

gesture
- CV: look at parent/child/researcher; object; other; out of frame

touch
- CV: picture book, “dollplay”, rhymes, etc

context
- CV: instructions, conversing child/adult, etc

Completed and upcoming studies
Completed:
- Rask, L. (2015). Prosodic Features in Child-directed Speech during the Child’s First Year

Upcoming:
- A Multimodal Account for Implications in Parent-Toddler Interaction
- Repetitions in child-directed speech; focusing on semantics

Annotation in ELAN
- About 10 student research assistants employed - all have studied linguistics for at least one year
- Detailed annotation instructions (updated when needed)
- Weekly meetings on annotation issues, e-mail contact whenever questions arise


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