The Cultural Context of Infant Communication

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Communication

Language and gestures are the primary tools for enculturation and learning new skills.
Culture

• Communication is a cultural expression
  – *How* to communicate (through gaze and gesture, body contact and movement, language)
  – *What* to communicate about (the purpose of communication and the content of communication)
Culture infuses communication
Language to teach about the world

Karasik, Tamis-LeMonda & Adolph (2014). *Dev Science*
Schieffelin and Ochs: Kaluli and Samoan

The give and take of everyday life

Language and utilization of shared resources

Bambi E. Schieffelin
The communication accommodation continuum

Child-centered
✓ Talk about what is of interest to the infant and high responding to infant
✓ Use of a special register in infant-directed speech
✓ Engage infants as conversational partners

Situation-centered
✓ Parents talk about what is relevant, rather than the interests of infant
✓ Use of adult register when addressing infant
✓ Responsibility on infants to figure out what is going on and how to enter ongoing activities

Shieffelin & Ochs, 1986
Levine: The Gusii of Kenya

- Subsistence farmers, with household responsible for growing food for survival
Levine: Gusii of Kenya

• Child obedience and responsibility valued and expected so mothers can complete chores
• Mother goal is to prevent crying and arousal
• Little verbal stimulation; much time feeding, holding, and lulling infants to sleep
Time mother talks and holds infant

Levine et al., 1994
Infant vocalizing and crying

Levine et al., 1994
Mayan communities

Rogoff, 1990, 2003
Rogoff: Learning through observation
Our Research:
Communication as a Window onto Culture

• How is culture expressed in communications between parents and infants from different ethnic/racial cultures in the United States?
• How do cultural practices promote specific skills in children?
Research Questions

Do mothers from different ethnic backgrounds differ in:

- *How* they communicate (mode):
  - Through the use of language or gesture

- *What* they communicate about (content):
  - Do communications serve to inform or regulate

- *Timing* of communications (timing)
  - Responsiveness to infants’ vocalizations and gestures
General Approach
General Approach

• Longitudinal, multi-year studies from birth through 1\textsuperscript{st} grade
• Ethnically diverse families
  – Mexican immigrants
  – Dominican immigrants
  – African American
Why these groups?

• All minority, low-income
  – attempt to avoid the SES-ethnicity/race confound

• Mexican (recent immigrant group)
  – Values of respect and obedience
  – Parent role to teach good behavior, not school skill
  – Learn through observation (Rogoff)

• Dominican
  – Contrasting Latino group (in United States longer)
Methods

- Mothers recruited from hospitals and clinics
- Home visits at 14 months, 2 years, 3 years
- Laboratory visits at 4 and 5 years, 1\textsuperscript{st} grade
Methods

• Mothers and children video-recorded
  – Sharing wordless number book
  – Sharing wordless emotion book
  – Stringing beads
Three key features of communication

• Mode
• Content
• Timing
Mode of communications

- Gestures
- Language
Content of communications

• What is contained in the input (such as):
  – Language amount (word tokens)
  – Language diversity (word types)

• And the pragmatic function of input:
  – Referential or regulatory language (or gestures)
Referential communications

• Teach “what” or *about the world*
  – Provide information or ask about activities, events, objects
    • E.g., using hands to indicate how big or small object is
    • E.g., “That’s a red ball”, “Are you stirring the food?”
Referential language
Regulatory Language

• Teach “how” to *act in the world*
  – Guide attention and action
    • E.g., “pointing” where to place next bead, how to stir with spoon
    • E.g., “Look at that!”,” “Put it there.” “Don’t do that”
Regulatory language and gestures
Regulatory language and gestures

Bead-Stringing at 14 Months
Timing of Communications

• Responsive communications:
  – Within 2 seconds and matched to infant focus

Example of contingent verbal responsiveness

Mother says “That’s a ball”

Baby look at ball

Time (seconds)
Example of contingent verbal responsiveness

- Time (seconds)
  - 2-3 sec

- Baby looks at the ball

- Mother says “That’s a ball”

- Time window of contingent responsiveness
Contingent language

Increases likelihood that infant will map the word to the referent in the world
Contingent gestures & language

The coordination of words and actions (e.g., gestures) facilitates infant attention and word learning by reducing ambiguity.
Responding to vocalizations and gestures
14-Month Infant Measures

• *MacArthur Communicative Development Inventories (MCDI)*:
  – Infant gestures
  – Receptive vocabulary size
  – Productive vocabulary size
2 Year Infant Measures

• **Fine Motor/Action Skills:**
  – Mullen Scales of Infant Development: Fine Motor and Visual Reception Subscales
    • “Put this one in”
    • “Put them together”
    • “Put another one in there”

• **Receptive & Productive Language**
  – Mullen Scales of Infant Development subscales
Cultural differences in mothers’ communications

• Hypotheses:
  – Mexican mothers will communicate through gestures more so than Dominican and African American mothers, and be highly responsive to infant gestures.
  – Mexican and Dominican (Latino) mothers will use more regulatory language than African American mothers who will use more referential language (teaching “what” vs. teaching “how”)
Cultural differences in infant skill

• Hypothesis
  – Mothers’ gestural communications will relate to infants’ gestures and fine motor skills; mothers’ referential language will promote language skills
  – Mexican infants will excel in gestural vocabulary size, AA infants in expressive vocabulary size
Findings: Mothers type of language and mode of communication

General principles and cultural specificity
All mothers modify their language type in line with task (14 Months)

Tamis-LeMonda & Song, Developmental Science, 2012
All mothers modify their language type in line with task (24 Months)

Tamis-LeMonda & Song, Developmental Science, 2012
But, Latino mothers more likely to use regulatory language than AA moms.

Tamis-LeMonda, Song et al. (2013) *Dev Science*
Mexican mothers most likely to respond to infant touching of objects

Tamis-LeMonda et al., IEEE Transactions in Autonomous Devt, 2013
Mexican mothers most likely to use gestures to communicate to 14-month olds

![Bar chart showing frequency of gesture use by different ethnicities: African American, Dominican, and Mexican. The Mexican group shows the highest frequency, followed by the Dominican, and then the African American group.]

Tamis-LeMonda, Song et al. (2013). *Dev Science*
Mexican mothers respond to infant gestures with referential language (14 months)

Tamis-LeMonda, Song et al. (2013). Dev Science
Findings: Culture & Infant Skill

Cultural similarities and differences
Infants from all ethnicities benefit from referential language

• Expressive vocabulary size:
  – Referential (but not regulatory) language relates to infant vocabulary size
    • Tamis-LeMonda et al. (2012), Dev Science

• Learning to become a communicative partner:
  – Infants themselves are responsive to their mothers’ referential (but not regulatory) language
Infants from all ethnicities increase their responsiveness in line with their mothers

- Infants’ vocalizations are temporally connected (follow within 3 seconds) of mothers’ referential language, but only for those infants whose mothers are responsive!
Infant from all ethnicities: vocalize in response to mothers’ referential (14 mos)

Mother Referential to Infant Voc

**p<.001

Kuchirko, Tamis-LeMonda & Tafuro, under review
Infant from all ethnicities: vocalize in response to mothers’ referential (24 mos)

Kuchirko, Tamis-LeMonda & Tafuro, under review
Infant from all ethnicities: Suppress vocalizations after regulatory language

14 months

24 months

Kuchirko, Tamis-LeMonda & Tafuro, under review
Mexican and Dominican infants have larger gestural vocabularies at 14 Months (MCDI)

Tamis-LeMonda, Song et al. (2013). Dev Science
Mexican infants gesture in response to mothers’ referential language at 14 months

Kuchirko, Tamis-LeMonda & Tafuro (under review), *Infancy*
Mexican infants have strongest fine motor skills at 2 years (Mullen)

Tamis-LeMonda, Song et al. (2013) *Dev Science*
Dominican and AA infants have larger expressive vocabularies (14 mo MCDI)

Tamis-LeMonda, Song et al. (2013) Dev Science
AA infants largest expressive language at 2 years (Mullen)

Tamis-LeMonda, Song et al. (2013) *Dev Science*
Summary on similarities…

• Across group common processes exist
  – Language is context dependent: Mothers shift their talk across different tasks
  – Referential language shows benefits for infants from all backgrounds, in part due to its richer lexical diversity compared to regulatory
  – Responsiveness of mothers relates to responsiveness of infants: A path to becoming a communicative partner
Summary on differences…

• Culture infuses communication in infancy:
  – Mexican mothers focus on gestures as a mode of communication
  – Mexican infants, in turn, respond to mothers with gestures, and show superior fine motor skills
  – Latino emphasis on regulatory language (teach how to act in the world)
  – African American emphasis on referential language (teach about the world)
What is needed in future research

• Movement away from pan-ethnic categories to understand the unique communications of parents from different backgrounds
• Extension of research beyond language to consider the specific ways children from different backgrounds communicate
• Recognition of cultural similarities in learning
• Attention to within-group variation
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