Investigating the Relationship between Parental Communicative Behavior During Shared Book Reading and Infant Volubility

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BACKGROUND
- There is a well-established relationship between pre-linguistic vocalization and later language development. Infants who are "better babblers" demonstrate accelerated language development. [1, 2]
- Child internal factors (e.g., hearing status, disability, language status, etc.) are known to affect quantity and quality of babble [3, 4].
- Some external/environmental factors have been found to increase infant volatility under experimental conditions:
  - Contingent verbal and non-verbal parental responsiveness [5, 6, 7]
  - "Still Face" paradigm [8]
  - Imitation of child vocalizations [9]
- Parents use a variety of behaviors (e.g., sound effects, singing, interjections, etc.) to engage infants during play.
- Little is known, however, about the impact of these naturally occurring parental communicative behaviors on infant volatility.

CURRENT STUDY
- The goal of the current study was to explore the relationship between parental communicative behavior and infant volatility during play with books.
- It was hypothesized that increased parental talk, greater use of engaging/excited expressions, and greater parental responsiveness would be associated with increased infant volatility. A variety of additional parental communicative behaviors were also explored.

METHODS

Participants
- 20 parent-infant dyads

Infant information
- Age: Mean = 13.4 mo (range = 10.8 – 16.9)
- 8 male, 12 female
- Standard score on LENA Developmental Snapshot*: Mean = 103.3 (range = 86-123)

*Mean = 100; s.d. = 15

Parent information
- 18 biological mothers, 2 biological fathers
- English is the primary language used in the home
- Education level: 4 or more years college (n=15); some college (n=4); high school degree (n=1)
- Race/ethnicity: non-Hispanic white (n=18); Hispanic (n=1); Native American (n=1)

Procedures
- Data presented are taken from a larger study investigating the effect of the type of toy used during play on parent-infant communicative behavior
- Data for the current study include 1 parent-infant play session with infant books, lasting approximately 15 minutes
- Books: 2 with farm animal theme, 2 with shapes theme, and 1 with color theme

RESULTS

Measure (per minute) Mean (S.D.)
Adult words 65.72 (21.34)
Questions 5.08 (1.9)
Directives 2.07 (1.08)
Rejections/negations 0.11 (0.19)
Engaging/Excited exp. 8.66 (3.55)
Verbal responsiveness rate 0.55 (0.21)
Infant vocalizations 4.02 (2.26)

Analysis
- Correlational analysis was conducted to explore the relationship between parental communicative behaviors and infant volatility during the play session.
- When all dyads were included in the analysis, there were no significant correlations between parental communicative behaviors and infant volatility.

Pearson r values for correlation between infant volatility and select parent communicative measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>r value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult words</td>
<td>-0.32</td>
</tr>
<tr>
<td>Engaging/excited expressions</td>
<td>-0.18</td>
</tr>
<tr>
<td>Verbal responsiveness rate</td>
<td>0.07</td>
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</tbody>
</table>

When the 2 most extreme cases were removed (1 infant who vocalized only .29 times per minute and another who vocalized 9.6 times per minute), there was a significant correlation between parental verbal responsiveness and infant volatility (r=.55; p<.05). There was still no relationship between adult words per minute and infant volatility.

DISCUSSION & CONCLUSIONS
- There was no clear relationship between parental communicative behavior during play and infant volatility. This is consistent with results of Franklin et al. (2014), who found no relationship between parent and infant volatility during lab play sessions.
- Overall “talkative” babies babbled more during play and overall taciturn babies babbled less, regardless of their parent’s communicative behavior during play.
- Surprisingly, there was no relationship between the amount of adult language heard by infants over the course of 3 days of recording and infant volatility, in spite of the fact that children who hear more adult language have been reported to exhibit accelerated language development. [10]
- The relationship between quantity of language input heard by infants and language development may only be present over an extended period of time, not at a single measurement point. [1]

References