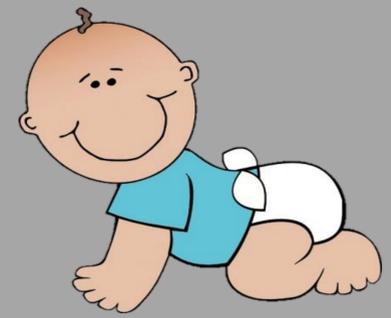




# Happy Babies, Chatty Toddlers: Infant Positive Affect Facilitates Early Expressive, but not Receptive Language



Lauren M. Laake, Anastasia S. Skowron, Ashley S. Clemons, Kayde L. Merrell, Heather Fronczak, Lauren A. Rodman, & David J. Bridgett  
Northern Illinois University

## Introduction

- Early language acquisition has implications for later academic and socio-emotional functioning.
- Language skills at 10 months of age have predicted academic and intellectual outcomes at 11 years of age.<sup>1</sup>
- There is growing interest in child characteristics that may promote the development of language.
- Temperament characteristics are being increasingly examined in relation to language development.<sup>2</sup>
- Some studies have examined the possible contribution of positive affect (PA), an aspect of temperament, to language development, but results have been mixed.
- PA is the tendency to approach novelty, seek out environmental stimulation, and express/experience positive emotions.<sup>3</sup>
- No studies were identified that examined both infant PA broadly, along with fine-grained aspects of PA, in relation to language development.
- Furthermore, studies have typically utilized children ages 2 years and older and have measured language skills with parent-report checklists of vocabulary.
- The current study addresses these limitations by utilizing an individually administered measure of expressive and receptive language to investigate the impact of PA at 10 months of age on emerging language abilities at 14 months of age.

## Hypotheses

- The broad temperament dimension of PA was expected to significantly predict both expressive and receptive language outcomes at 14 months of age.
- All sub-dimensions of PA were expected to be positively associated with, and predictive of, expressive and receptive language.

## Participants

- Eighty-five mother-infant dyads participated in a larger longitudinal study; 56 dyads completed the 10 month questionnaire and attended the 14 month laboratory session.
- 57.1% of infants were female; 42.9% were male.
- Families were predominately Caucasian (75.6%), with 11.1% self-identifying as Hispanic and 6.3% as African American.
- Mean maternal age was 29.18 (SD = 6.49, range = 18 – 42) and maternal education level ranged from 9 to 20 years (M = 14.51, SD = 2.79).

## Measures & Procedure

- Mothers completed demographics questionnaires when infants were 4 months of age.
- Cumulative risk was calculated based on maternal characteristics (under 21 years old, less than a high school education, single marital status, and/or past or current depressive episode based on a clinical interview) and an income-to-needs ratio at or below the poverty threshold.
- Mothers completed the PA dimension of the Infant Behavior Temperament Questionnaire-Revised<sup>3</sup> (IBQ-R) when infants were 10 months of age, which includes the following sub-dimensions:
  - Activity Level: Gross motor movements during daily tasks
  - High Intensity Pleasure: Enjoyment related to novel stimuli
  - Perceptual Sensitivity: Detection or responsiveness to low intensity stimuli in the environment
  - Smiling & Laughter: Specific displays of PA during daily caretaking tasks
  - Vocal Reactivity: Vocalizations during daily activities
  - Approach: Movement toward, or excitement/anticipation of pleasureable tasks/activities
- At 14 months, the receptive and expressive language portions of the Bayley Scales of Infant Development, Third Edition<sup>4</sup>, was administered.

## Results

Table 1. Zero-Order Associations between Variables

|                         | Cumulative Risk | Receptive Language | Expressive Language |
|-------------------------|-----------------|--------------------|---------------------|
| Positive Affect         | -.011           | .174               | .378**              |
| Activity Level          | -.160           | .021               | .280*               |
| High Intensity Pleasure | .052            | .047               | .258+               |
| Perceptual Sensitivity  | -.014           | .252+              | .373**              |
| Smiling and Laughter    | .124            | .001               | -.072               |
| Vocalizing              | .012            | .129               | .268+               |
| Approach                | -.005           | .142               | .334*               |

+  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ .

Table 2. Predictors of Expressive Language

| Step   | Predictor               | Std. $\beta$ | $\Delta R^2$ |
|--------|-------------------------|--------------|--------------|
| Step 1 |                         |              | .089         |
|        | Cumulative Risk         | -.223        |              |
| Step 2 | Infant Gender           | -.192        |              |
|        | Positive Affect         | .369         | .136**       |
|        | Activity Level          | .251         | .061+        |
|        | High Intensity Pleasure | .303         | .090*        |
|        | Perceptual Sensitivity  | .343         | .110*        |
| Step 2 | Smiling & Laughter      | -.035        | .001         |
|        | Vocalizing              | .264         | .070+        |
|        | Approach                | .342         | .117*        |

+  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ .

Note: Each predictor in Step 2 was run individually in a separate analysis to minimize problems with multi-collinearity and suppression effects.

## Discussion

- Early expressive language skills were influenced by infant PA, as well as by a number of fine-grained aspects of PA.
- Contrary to expectations, neither PA, nor any of the sub-dimensions of PA, significantly predicted receptive language skills at 14 months.
  - Though not examined in the current study, it is possible that other dimensions of temperament (e.g., negative affect and/or orienting/regulation) are more salient for receptive language.
- Infants who display more PA may elicit more social interactions, helping to create more opportunities to develop expressive language skills.
- It is possible that children who score higher in Perceptual Sensitivity, High Intensity Pleasure, and Approach are more aware of events in their environments, which might increase the amount of language to which they attend.
- Future work could utilize a larger sample and examine PA growth trajectories in relation to language outcomes.
- Future studies may also investigate interactions based on gender, as girls typically develop language skills at a faster rate than boys.
- Finally, infant temperament characteristics may interact with parenting styles/patterns to influence language development.
  - Infants with higher PA who experience responsive and sensitive parenting may develop language skills faster than infants who experience less positive parenting.

## References

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Corresponding Authors: L.L. (laurenlaake@gmail.com) or D.J.B. (dbridgett1@niu.edu)  
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