How does maternal responsivity relate to communication skills in young children with fragile X syndrome?

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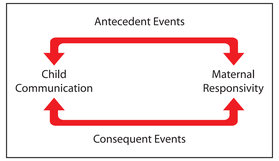
Introduction

How does maternal responsivity affect child communication?

Children of highly responsive mothers have been found to have relatively higher scores or measures in the following areas of communication development:

- Language comprehension (Baumwell et al., 1997)
- Productive vocabulary (Tomasello & Farrar, 1986; Tomasello & Todd, 1983)
- Social interactions (Landry, Smith, Swank, Assel, & Vellet, 2001)
- Prelinguistic communication (Yoder & Warren, 1998)

The effect of maternal responsivity and child language development is thought to be transactional.



Why study responsivity in families with FXS?

- Children with fragile x syndrome (FXS) may present challenges that could affect parental responsivity.
  - Challenging behaviors
  - Slower communication development
- Mothers of children with FXS may have higher levels of anxiety or depression, and more variability in IQ than mothers of children without disabilities (Abbeduto, Wyngaarden Krauss, Orsmond, & Murphy, 2004)

Methods

The data presented in this poster were derived from the first observation point of an ongoing longitudinal study of children with FXS.

Who were the participants?

- 58 mother-child dyads.
- There were 47 boys and 11 girls in the sample
  - Mean child chronological age was 28.05 months and the range was between 11 and 48 months
  - All of the children had full mutation FXS.
- Four mothers also had full mutation FXS.

How were the data collected?

- Videotaped observations of mother-child interactions were collected at participant homes.
- The videotapes were collected in four different contexts: joint book reading, making and eating a snack, free play, and activities of daily living.

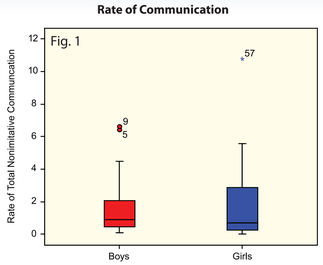
What behaviors were coded?

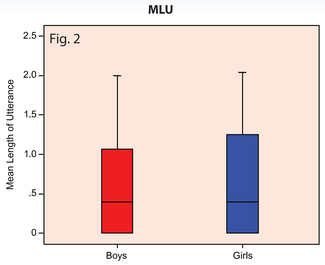
- Child communication variables:
  - Rate of non-imitated communication = rate per minute of all verbal and nonverbal communication acts that were not imitative.
  - MLU= mean length of verbal utterances.
  - Number of different words (or signs) produced.
- Maternal interactions variables:
  - Facilitative interaction style (comments + recodes + gestures + request for verbal complies)
  - Behavior management style (zaps + redirects + requests for behavioral compliance)
- Reliability: Consensus coding procedures were used for child and maternal behavior codes. Independent reliability prior to consensus were as follows:
  - .920 for child variables
  - .917 for molecular (factor indicators) for maternal variables
  - .957 for maternal affect and .701 for maternal flexibility

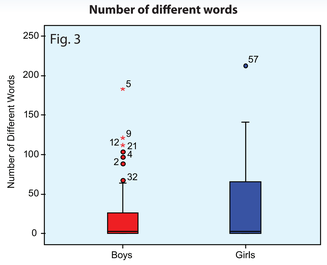
Results

What were the medians and ranges of the children's communication variables?

For each graph, the box indicates the middle 50% of the data, the line indicates the median and the whiskers indicate the ranges. Outliers are noted with asterisks.



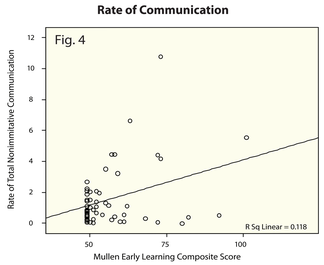


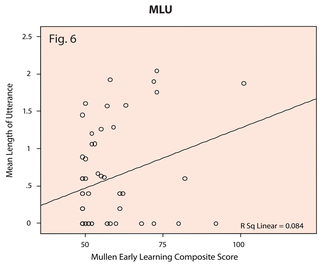


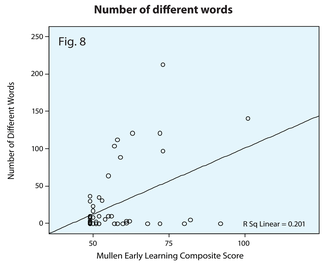
How did children's communication scores relate to maternal responsivity measures?

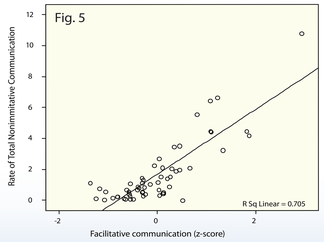
We ran multiple regression models for the effect of maternal responsivity on child communication variables. The maternal responsivity factor called facilitative interaction style significantly predicted communication scores, even after accounting for differences in childrens developmental levels.

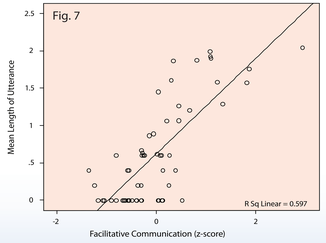
The maternal responsivity factor called behavior management style did not significantly predict child communication scores.

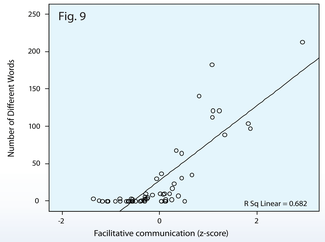












Summary and Discussion

- Children with FXS, whose mothers had relatively more of a facilitative interaction style communicated more often, used more words and combined words into longer utterances compared to children with less responsive mothers.
- These findings are consistent with other studies that have documented a significant relationship between maternal responsivity and child language outcomes.
- These results are for one point in time only. Data are currently being collected for second and third time points. These results will be analyzed in order to learn more about the complex nature of mother-child interactions as they develop over time in families with fragile X syndrome.

Literature Cited

Abbeduto, L., Wyngaarden Krauss, M., Orsmond, G., & Murphy, M. (2004). Psychological well-being and coping in mothers of youths with autism, Down syndrome, or fragile X syndrome. *American Journal on Mental Retardation, 109*(3), 237-254.

Baumwell, L., Tamis-LeMonda, C. S., & Bornstein, M. H. (1997). Maternal verbal sensitivity and child language comprehension. *Infant Behavior and Development, 20*(2), 247-258.

Harris, S., Kasari, C., & Sigman, M. (1996). Joint attention and language gains in children with Down syndrome. *American Journal of Mental Retardation, 100*, 608-619.

Hodap, R. K. (2002). Parenting children with menatl retardation. In M. H. Bornstein (Ed.), *Handbook of parenting: Volume 1 Children and Parenting* (Vol. 1, pp. 355-381). Mahway, N.J.: Lawrence Erlbaum Associates.

Landry, S., Smith, K., Swank, P., Assel, M., & Vellet, S. (2001). Does early responsive parenting have a special importance for children's development or is consistency across early childhood necessary? *Developmental Psychology, 37*(3), 387-403.

Landry, S., Smith, K., Swank, P., & Miller-Lonear, C. (2000). Early maternal and child influences on children's later independent cognitive and social functioning. *Child Development, 71*(2), 358-375.

Tomasello, M., & Farrar, M. J. (1986). Joint attention and early language. *Child Development, 57*, 1454-1463.

Tomasello, M., & Todd, J. (1983). Joint attention and lexical acquisition style. *First Language, 4*(12), 197-211.

Yoder, P., & Warren, S. (1998). Maternal responsivity predicts the prelinguistic communication intervention that facilitates generalized intentional communication. *Journal of Speech, Language and Hearing Research, 41*, 1207-1219.

Yoder, P., & Warren, S. (1999). Maternal responsivity mediates the relationship between prelinguistic intentional communication and later language. *Journal of Early Intervention, 22*(2), 126-136

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