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Introduction

Chronic childhood aggression can be the beginning of a developmental trajectory that begins with minor aggression, moves on to physical fighting, and then to violence (Loeber & Farrington, 2000).

Child behaviors

While not all aggressive children will continue on the "aggressive pathway," we know some of the risk factors related to aggression:

- Difficult temperament
- Poor regulation ability
- Low language ability

(Carson, Klee, Perry, Muskina, & Donaghy, 1998; Loeber & Hay, 1997; McCabe, 2005; NICHD, 2004; Qi & Kaiser, 2003).

Parenting behaviors

Parenting strategies that support children's language (e.g. asking questions, directing attention) and emotional development (e.g. sensitivity, responsiveness) may provide important buffers for these child risk factors.

Parental behaviors that have been associated with child aggression include:

- Harsh discipline
- Rejecting parenting
- Lack of language supporting behaviors
- Non-responsiveness (Loeber & Farrington, 2000; Loeber & Hay, 1997; NICHD, 2004; Qi & Kaiser, 2003; Shaw, Gilliom, Ingoldsby, & Nagin, 2003).

Parent-child Interactions

Synchronous parent-child interactions

- Encompass both the mother's and the child's responsivity
- Are characterized by emotional availability to each other

Parents are:

- Responsive to their toddlers,
- Attuned to their child's needs,
- Nurturing



Toddlers are:

- Easy to soothe,
- Happy and playful,
- Predictable

Synchronous parent-child interactions are associated with

- Positive social outcomes (Clark and Ladd, 2000; Criss et al., 2003)
- Low levels of aggression (Harrist et al., 1994).

While it seems that both the parent and child should contribute to a synchronous interaction, little research has been done to examine the parent and/or child characteristics that are associated with synchronous interactions (Skuban, Shaw, Gardner, Supplee, & Nichols, 2006).

Research Questions

Is parent-child synchrony related to early aggression over and above child language and maternal behaviors?

What child and maternal factors are associated with parent-child synchrony?

Sample

68 mothers and their toddlers (60% female)
18 to 24 months
100% Caucasian
\$36,792 average annual income
15 years average maternal education



Measures

- **Behavior Problems** - Child Behavior Checklist (CBCL; Achenbach, 1991)
- **Vocabulary production** - MacArthur Communicative Development Inventories (CDI; Fenson, Dale, & Reznick, 2003)
- **Temperament** - Children's Behavior Questionnaire - (CBQ; Rothbart, 2000)
- **Parent-Child Synchrony** - Functional Emotional Assessment Scale (FEAS; Greenspan, 1992)
- **Child Engagement** - coded videotaped mother-child play activity (Brady, et. al)

Videotaped Interaction

Mother and child coded behaviors during a play activity:



- Asking questions
 - Yes/no
 - Open-ended
 - Simple 'wh' questions
- Directing attention
 - mom's attempts to refocus child
 - request's for action
- Engagement
 - Extent to which child shows, initiates, and/or maintains interaction with parent
- Synchrony
 - mutuality and reciprocity of parent-child interaction

Results

• Hierarchical regression results indicate that a lack of parent-child synchrony predicts child aggression above and beyond child language and maternal language-supporting behaviors (Table 1).

• Simple 'wh' questions were positively correlated with synchrony while open-ended questions were negatively correlated (Table 2).

• Parent-child synchrony was best predicted in step-wise multiple regression by child engagement and maternal simple 'wh' questioning (Table 3).

Table 1. Aggression regressed on child language, maternal behaviors, & parent-child synchrony

	CBCL Aggressive Behavior Subscale					
	B	SE	β	Sig.	R ² Change	F Change
Child vocabulary production	.009	.006	.195	.140		
Maternal Open ended questions	.310	.561	.071	.583		
Maternal Simple wh questions	-.122	.152	-.104	.425		
Maternal Directing attention	-.324	.280	-.151	.253		
Parent-child synchrony	-4.488	2.013	-.305	.030	.073	4.97 (p<.05)
Model R square	.15					

Table 2. Correlations

	Aggressive behavior	Parent-child synchrony
Behavior Problems		
Aggressive behavior	1.0	-.28*
Child attention problems	.74**	-.28*
Temperament		
Soothability	-.32**	-.15
Child attention	-.23+	.26*
Child engagement	-.27*	.40**
Vocabulary Production	.06	.14
Gender	.11	.09
Age	.13	-.22+
Maternal open-ended questions	.10	-.24*
Maternal 'wh' questions	-.17	.30*
Maternal Directing attention	-.09	-.31*
Parent-child synchrony	-.28*	1.0
Income	-.01	-.09
Maternal education	.00	.19

*Correlation is significant at 0.05
**Correlation is significant at 0.01

Table 3. Parent-child synchrony regressed on child temperament, child behavior problems, child engagement & maternal language-supporting behaviors

	Parent-child synchrony					R ² Change	F Change
	B	SE	β	Sig.	R ² Change		
Child Attention - Temperament	.018	.026	.085	.493			
Child Attention Problems	-.035	.026	-.160	.181			
Maternal Open ended question	-.036	.034	-.125	.297			
Maternal Simple 'wh' questions	.023	.009	.287	.018	.31	4.83 (p<.01)	
Child engagement	.157	.055	.329	.006			
Model R square	.25						

Conclusion

While much of the research indicates that low language ability is a predictor of toddler aggression, this study found low parent-child synchrony to be an important risk factor that is often overlooked (Skuban, Shaw, Gardner, Supplee, & Nichols, 2006).

This study found that while open-ended questioning by mothers did not predict parent-child synchrony, asking simple 'wh' questions did suggesting that the predictive value is unique to specific types of language-supporting behaviors. Child temperament also plays an important part in maternal-child synchrony. Parents may find an engaged and easy-going child to be a more enjoyable play partner and it may take less effort on the part of the parent to interact with these children.

This study provides information on synchrony and it's relation to child aggression. These results are promising given that both child and mother characteristics contribute to the relationship. Early intervention efforts that target a synchronous mother-child relationship through parent education and support may contribute to more promising outcomes for children at risk.