

A Dynamic Systems Approach to Mother-Child Emotion Co-Regulation in Relation to Adaptive Functioning in Children with ASD

Introduction

- Parents play an important role in the development of emotion regulation capabilities (Sroufe, 1996), but little is known about emotion regulation between parents and young children with ASD.

Objective

- To investigate associations between emotion co-regulation and adaptive functioning in children with ASD

Methods

- Mothers and their children were observed in their homes during the **Three Boxes** semi-structured play procedure (Vandell, 1979). Interactions were taped for later coding.
- Participants**
 - 51 families of children with ASD
 - 41.2% White; 25.5% Hispanic, 15.7% Asian, and 15.7% multi-ethnic families
 - 9.8% of mothers had high school diploma; 88.3% completed at least "some college"
 - 74.5% boys, 25.5% girls
 - Children's ages: $M=5.26$, $SD=1.38$
- The Vineland Adaptive Behavior Scales** measured adaptive behavior (Sparrow et al., 2005).
- Social Communication Questionnaire (SCQ)** measured severity of autism (Rutter, Bailey, and Lord 2003).
- Engagement** of mothers and children was coded separately using an observation software **INTERACT** 9.47 (Mangold, 2007).
- Inter-rater reliability:** child engagement 91.86% ($k=0.81$); mother engagement 91.85% ($k=0.82$).
- Observation data were exported to the **State Space Grid** software (Lamey, Hollenstein, Lewis & Grancic, 2004).



Results

Table 1.
Correlations Between SCQ and Emotion Co-Regulation ($N=51$)

Emotion Co-Regulation	r	$M (SD)$
Transition	.51***	73.25 (18.34)
Dispersion	.53***	0.78 (0.12)
Cells	.48***	17.37 (6.65)
Mutual positive engagement	-.39**	64% (21%)
Mutual negative engagement	.26 [†]	6% (10%)

[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 1 indicates that in a low-stress context, higher autism symptomatology accompanies greater changes in dyadic emotional states, wider range of emotion, and less mutually positive engagement

Table 2.
Partial Correlations Between Emotion Co-Regulation and Adaptive Functioning Controlling for SCQ ($N=47$)

Partial r	Communication	Daily Living Skills	Socialization	Adaptive Behavior	Maladaptive Behavior
Transition	-.08	-.03	-.03	-.03	-.22
Dispersion	-.27 [†]	-.26 [†]	-.15	-.25 [†]	-.17
Cells	-.37**	-.41**	-.24 [†]	-.35*	-.18
Mutual positive engagement	.20	.04	.008	.07	.14
Mutual negative engagement	-.38**	-.45**	-.30*	-.38**	-.18

[†] $p < .10$. * $p < .05$. ** $p < .01$.

Table 2 indicates that in a low-stress context, wider range of emotion of mother-child interactions is associated with lower communication, daily living skills, and adaptive behavior; it also indicates that higher mutual negative engagement is associated with lower communication, daily living skills, socialization, and adaptive behavior after controlling for severity of autism.

Figure 2. Partial Correlation Between Cells and Adaptive Behavior

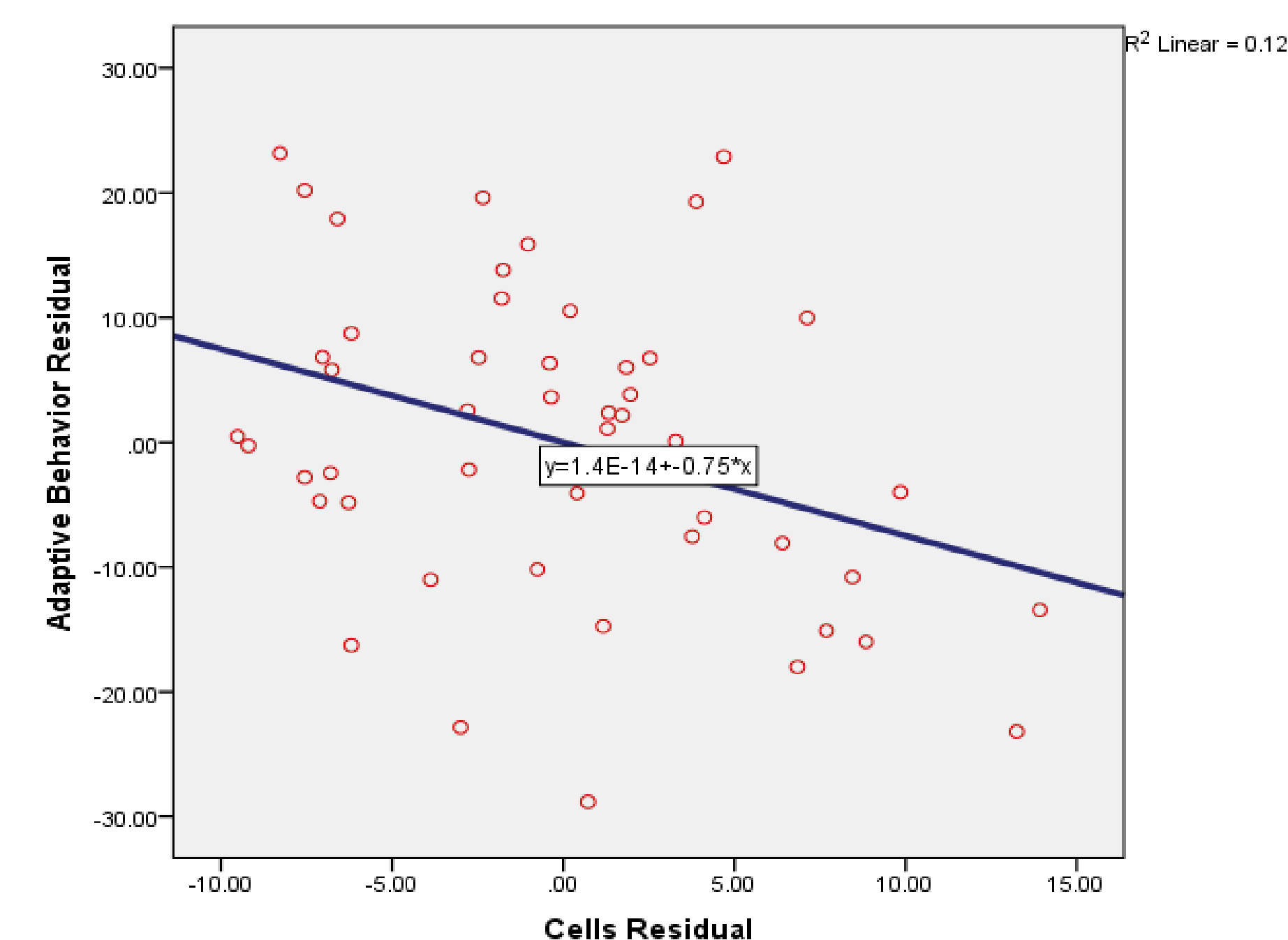
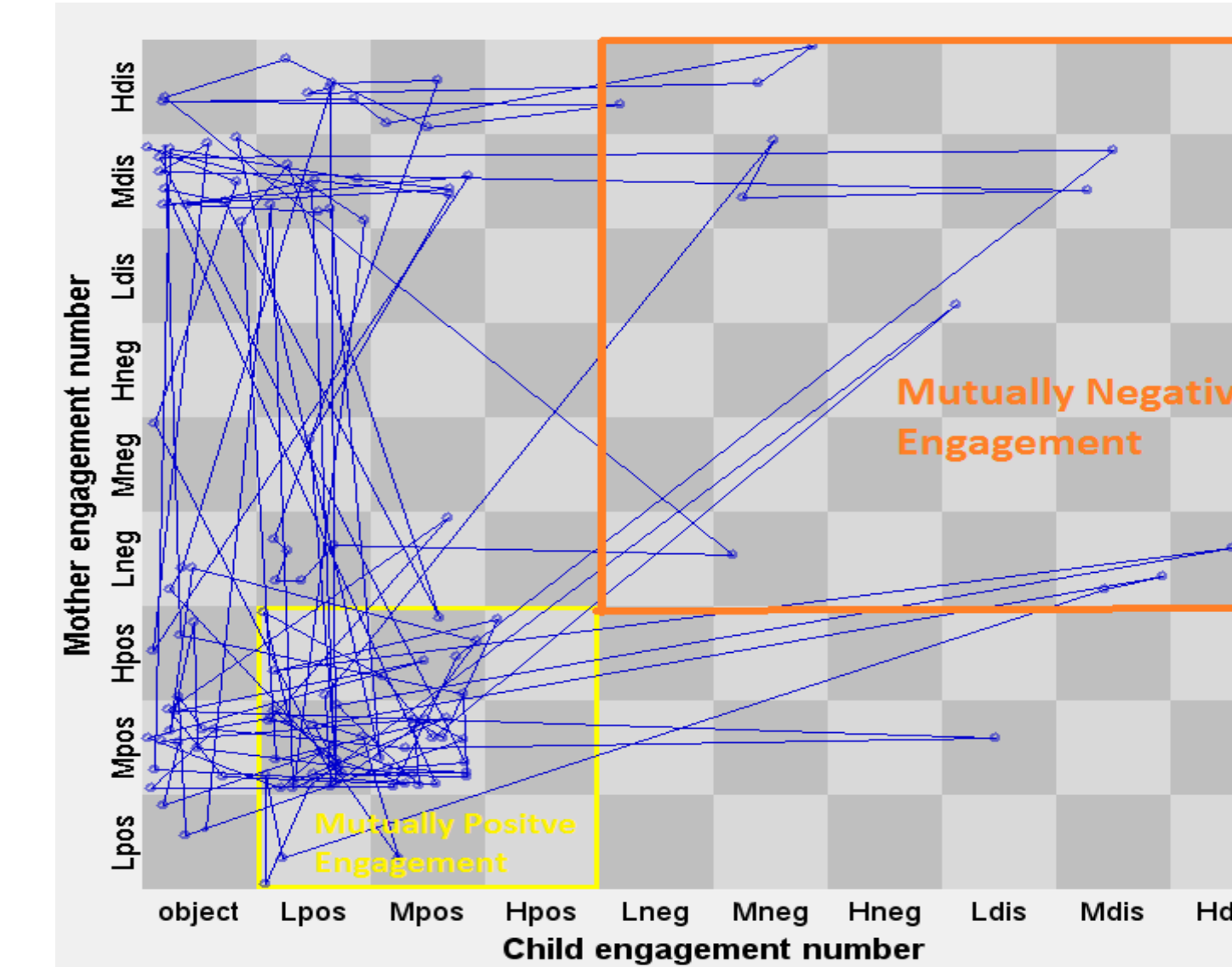
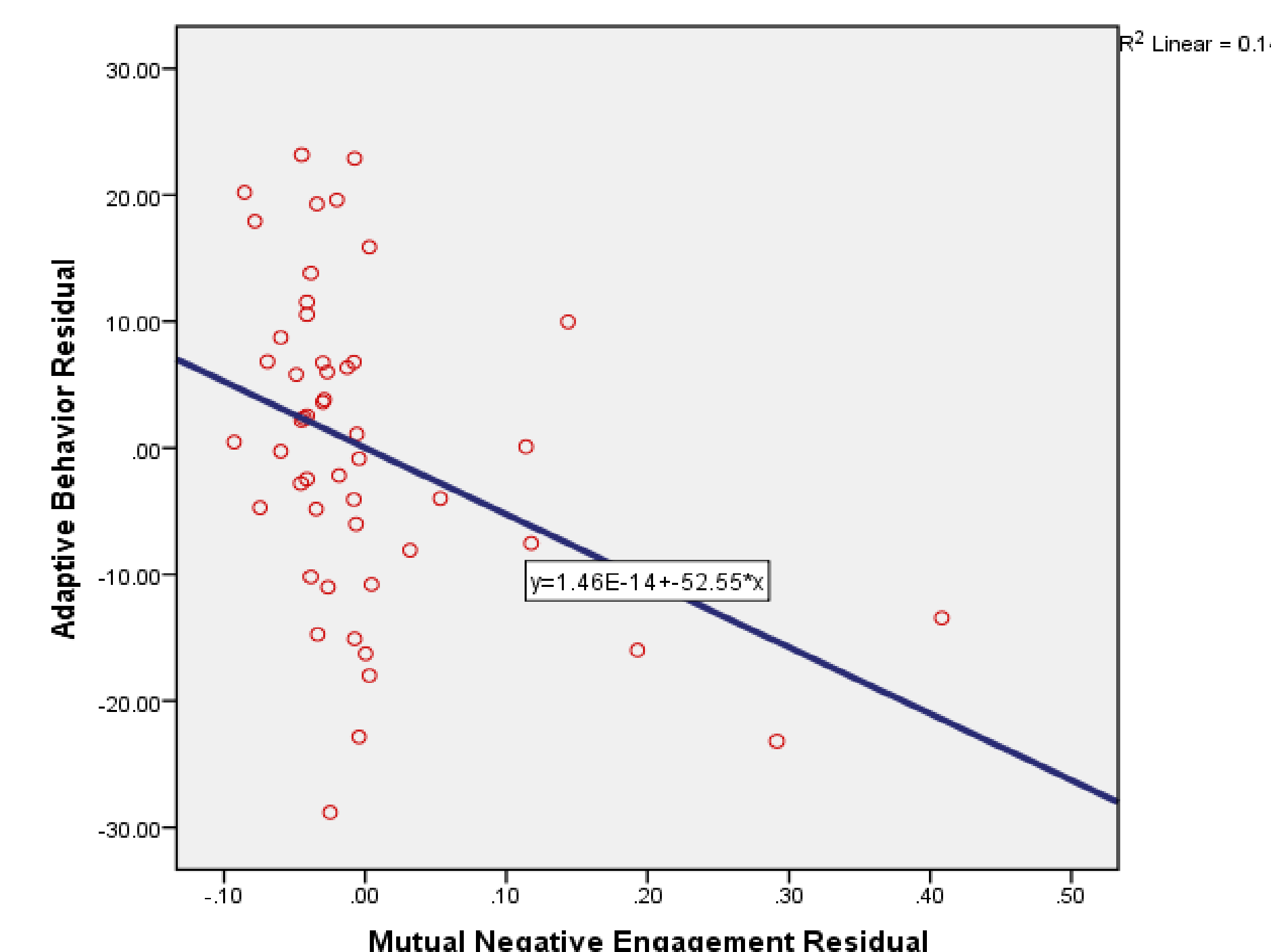


Figure 1. A Trajectory of State Space Grid



L: Low; M: Moderate H: High
Pos: Positive engagement Neg: Negative engagement
Dis: Disengagement

Figure 3. Partial Correlation Between Mutual Negative Engagement and Adaptive Behavior



Conclusions

- The findings suggest that children with higher severity of autism are vulnerable to be disregulated under a low-stress environment.
- The results suggest that higher negative co-regulation and greater range of emotion under a low-stress context are associated with lower adaptive functioning in children with autism.



Implications

- The findings provide insight into adaptive and maladaptive emotion regulation processes in the familial interactions of children with Autism Spectrum Disorder.
 - Theoretically**, the findings broaden the research perspective to value moment-to-moment approaches when studying the mechanisms in relationship patterns.
 - Clinically**, the knowledge generated from the current project may lead to advances in family interventions by integrating emotion regulation into therapy.

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