

Maternal Language During Play with Infants at High-Risk for Autism Spectrum Disorder

Sara A. Stahl, Rebecca Neal-Beevers, Ph.D., Ryan L. Boyd, Ph.D.
The University of Texas at Austin

Background

- The way parents communicate with their child has an impact on child development.¹
- Synchrony, or the quality of interaction between two people, is associated with positive child outcomes in mother-infant interactions.²
- Depression and parenting stress are greater in mothers of children with autism spectrum disorder (ASD) than in mothers of typically developing children.³
- Maternal depression can negatively impact synchrony.^{4,5}
- Language use has been linked with depression.⁶

Objective

- Investigate how maternal depression and parenting stress, maternal language, and synchrony are related to one another in the context of mother-infant dyads during play in which infants are at varying degrees of risk for ASD
 - High-risk (HR) infants have a biological older sibling with ASD
 - Low-risk (LR) infants have a biological older sibling who is typically developing

Hypothesis

- Mothers of HR infants will report greater parenting stress and depression and will use more first-person pronouns than mothers of LR infants.
- Greater maternal depression and stress will predict more use of first-person pronouns, negations, and words reflecting negative psychological processes such as anxiety and sadness, and less confidence in language.
- First-person pronouns and words reflecting negative psychological processes will predict lower synchrony between mothers and their 15-month-old infants.

Method

- This study used secondary data from a longitudinal study that included 32 mother-infant dyads recruited through various community organizations (15 HR; 17 LR)
 - Previously, mothers completed self-report measures of depression (CES-D) and parenting stress (PSI-SF), and participated in a video recorded, mother-infant play session that was later coded for synchrony (Synchrony 2: Synchrony of maternal utterances with child attention; Synchrony 3: Synchrony of maternal utterances with child attention and action)
- For the present study, 15-minute play sessions were transcribed verbatim and maternal language used during play was input into the Linguistic Inquiry and Word Count (LIWC; Pennebaker, Boyd, Jordan & Blackburn, 2015)

Group Means and Comparisons of Maternal Depression, Parenting Stress, and Mother-Infant Synchrony

Measure	High-Risk (HR)	Low-Risk (LR)	df	t	p
CES-D Total	16.4 (10.15)	5.13 (6.98)	(1, 26)	-3.456	.002**
PSI-SF Total	100.36 (16.43)	55.19 (24.8)	(1, 28)	-5.789	.000**
Synchrony 2	1.03 (.322)	1.22 (.46)	(1, 30)	1.378	.178
Synchrony 3	.87 (.31)	1.03 (.50)	(1, 30)	1.124	.271

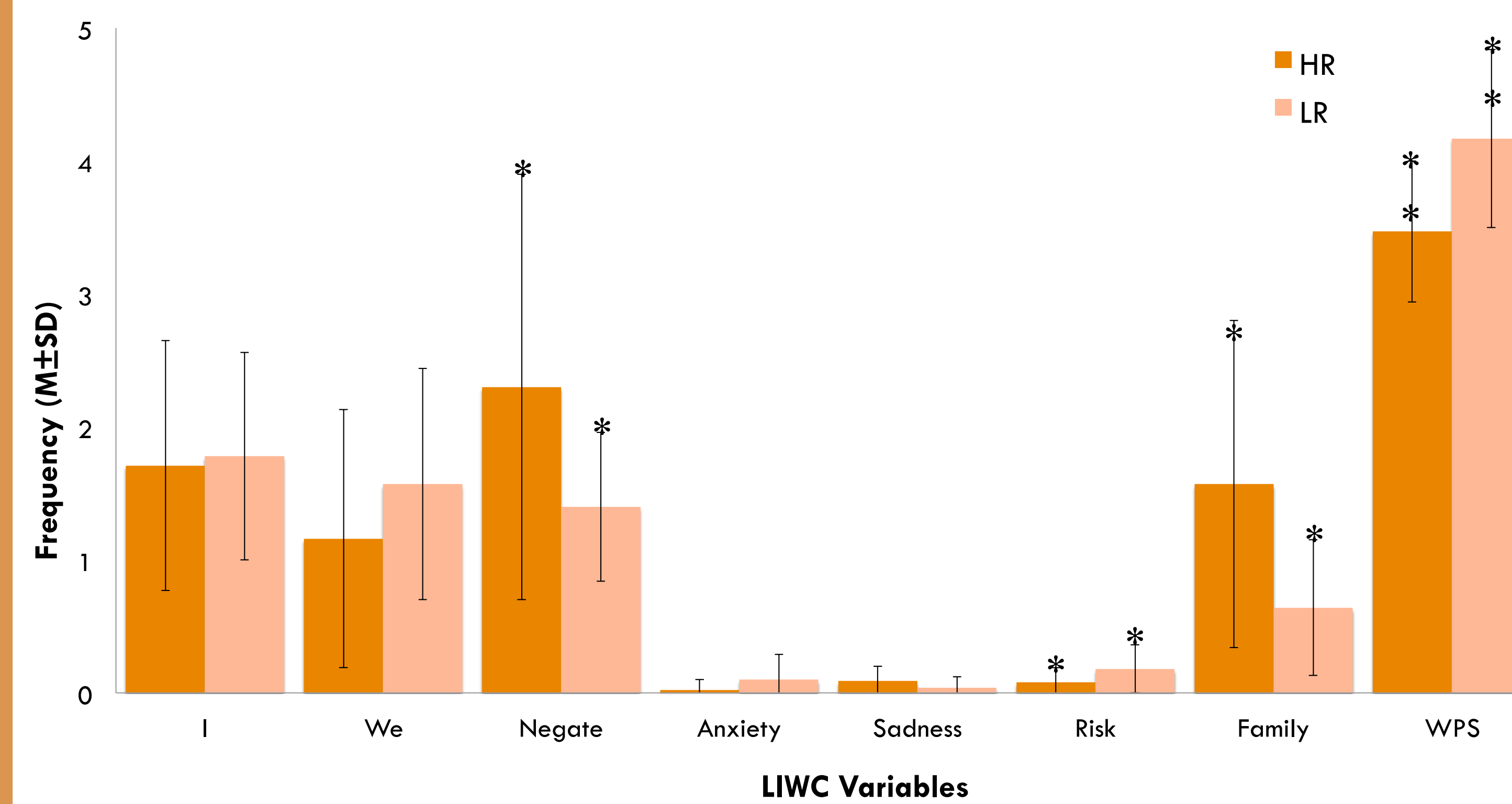
Note. CES-D, Center for Epidemiologic Studies Depression; PSI-SF, Parenting Stress Index Short Form.

Results

Negations, Risk, Family, and Words Per Sentence varied significantly between groups

LIWC VARIABLES	Examples	t	P
		df (1, 30)	
LINGUISTIC DIMENSIONS			
I	I, me, mine	.229	.821
We	we, us, our	1.246	.222
Negate	no, not, never	-2.218	.040*
PSYCHOLOGICAL PROCESSES			
Anxiety	worried, fearful	1.669	.109
Sadness	crying, grief, sad	-1.337	.194
Risk	danger, doubt	2.012	.055*
Family	daughter, dad, aunt	-2.745	.013*
SUMMARY LANGUAGE VARIABLES			
Clout	-	1.614	.122
Words/Sentence (WPS)	-	3.231	.003**

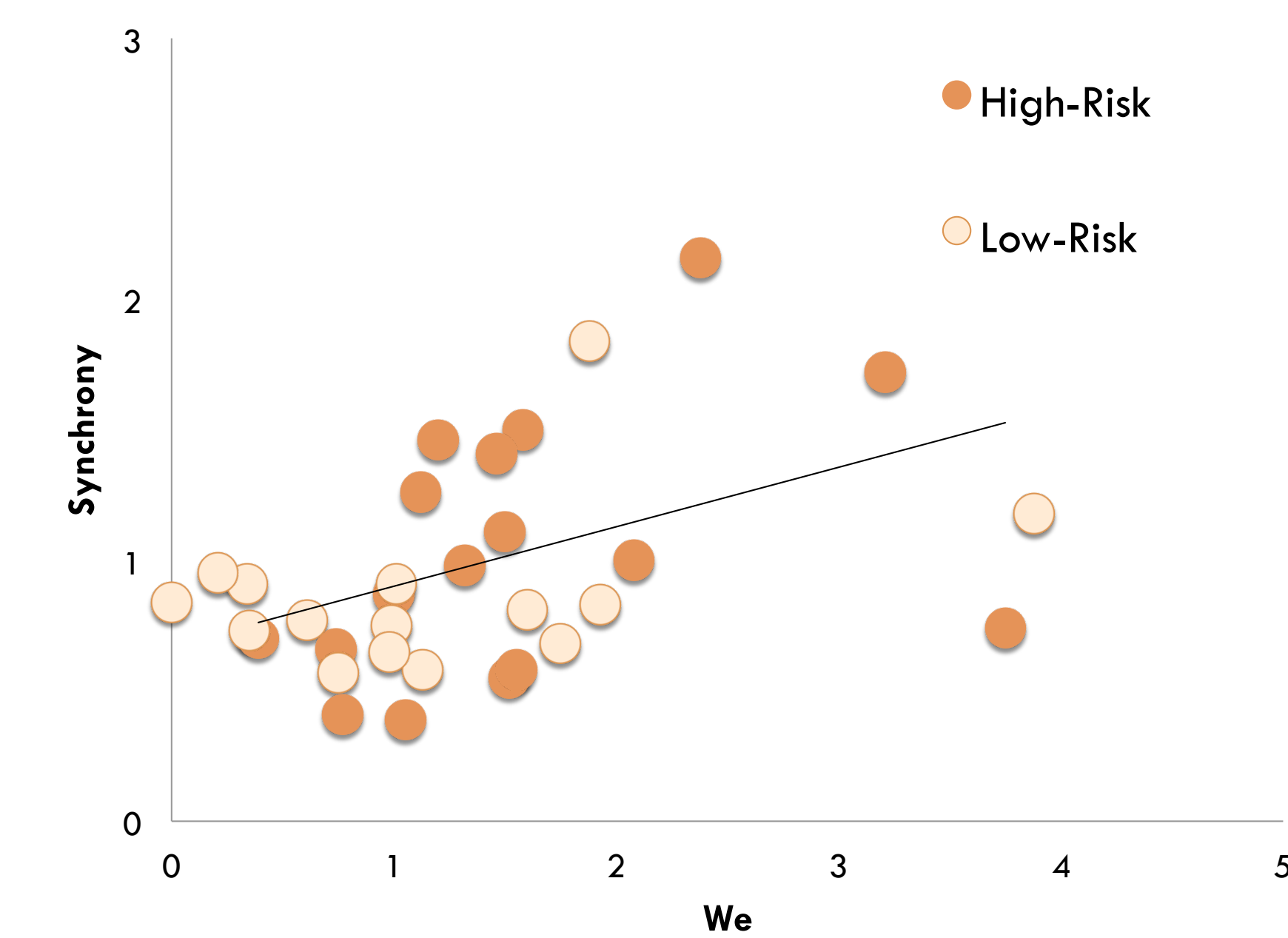
Note. LIWC, Linguistic Inquiry and Word Count. *p<.05, **p<.01



Regression Analysis Parenting Stress			
	R-Square	Beta	p-value
First-person singular	.003		.786
Parenting Stress		.052	.000
Negate	.070		.158
Parenting Stress		.265	.099
Anxiety	.011		.585
Parenting Stress		-.104	.187
Sadness	.061		.190
Parenting Stress		.246	.890
Clout	.039		.297
Parenting Stress		-.197	.000
Words per sentence	.221		.009**
Parenting Stress		-.470	.000

Regression Analysis Depression			
	R-Square	Beta	p-value
First-person singular	.180		.025*
Depression		.424	.000
Negate	.087		.127
Depression		.295	.000
Anxiety	.068		.182
Depression		-.260	.015
Sadness	.017		.510
Depression		.130	.091
Clout	.143		.047*
Depression		-.379	.000
Words per sentence	.265		.005**
Depression		-.515	.000

The only language variable significantly predicting synchrony was “we” statements



Regression Analysis Synchrony			
Measure	R-Square	Beta	p
We	.166		.021*
Synchrony 3		.407	.179

Conclusions

- Consistent with previous research, mothers of infants who are HR for developing ASD reported significantly more symptoms of depression and parenting stress
- There were no significant differences observed in synchrony between HR & LR groups
- Mothers of HR infants used more negation and family related words and less words per sentence and words reflecting risk than mothers of LR infants during play
- Consistent with previous research, mothers who reported greater symptoms of depression used more “I” statements during play. In addition, these mothers used less clout, which could be reflective of decreased confidence
- Greater depression and parenting stress predicted a decrease in words per sentence
- “We” statements predicted greater synchrony

Future Directions:

- This research can inform early intervention programs for parents interested in learning effective communication skills that build on the quality of the interaction with their infants.

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Questions or Reprints: sara.stahl96@gmail.com