

Sources of Variability in Maternal Behavior During Social Referencing Interactions



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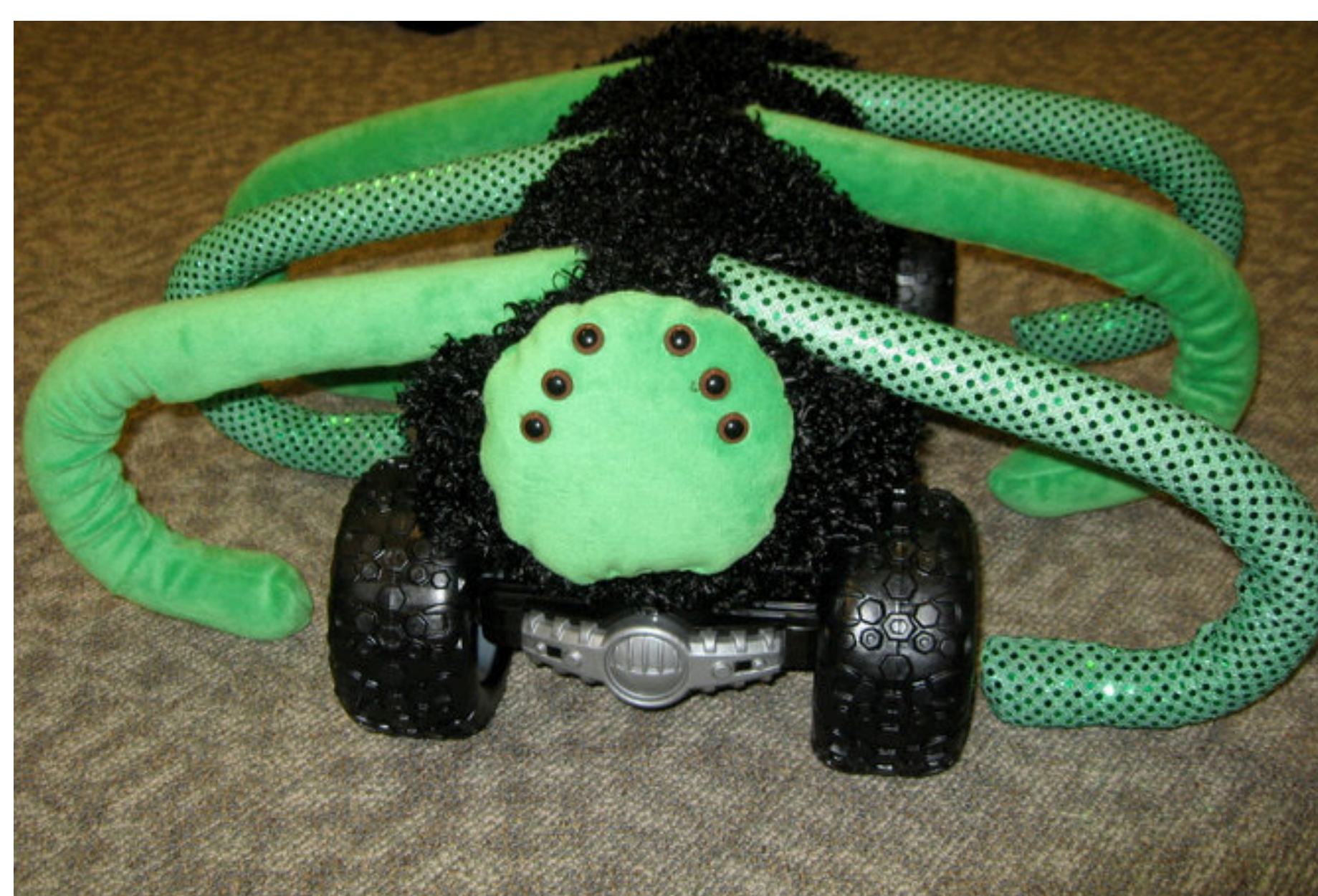
Introduction

In most social referencing studies, mothers are coached to display exaggerated negative or positive affect, and then infant responses to novel stimuli are compared across conditions. Mothers' verbal communication to their children is typically restricted to brief, descriptive utterances (e.g. "What a scary toy!" spoken in a fearful tone of voice) offered in the absence of any instructions as to how to respond the situation or reflections of what the child themselves may be feeling. While these scenarios offer experimental control, they may lack external validity because in naturalistic contexts parents may provide different kinds of emotional signals and may be especially unlikely to provide strongly negative messages. Thus, the purpose of this study was to examine naturally occurring, unscripted maternal behavior, with a particular focus on affective verbal messages, when both mother and child were presented with a novel, ambiguous object.

Research Questions:

- How do mothers affectively communicate to their infants when both are faced with an ambiguous event?
- Is maternal depressive symptomatology related to her likelihood of providing negative affective messages to her child?
- Do maternal perceptions of infant temperament relate to the types of affective messages she provides to her child?

Figure 1. Stimulus used in task



Method

Participants. 94 mothers and their 12-month-old infants (49 males; $M = 387$ days, $SD = 12.12$).

Measures. Maternal responses to an ambiguous event were assessed in the Free Response Task. Infants and mothers were invited to a large playroom, where mothers were asked to place their baby on a blanket then sit (and remain seated) in a chair several feet away. They were told that this time would be utilized for a camera check and were otherwise given no further instruction. Once mother and infant were settled, a remote-controlled toy (see Figure 1) entered the room and followed a standardized sequence of movement for 25 seconds before stopping and remaining motionless for two minutes. Both tone of voice (positive, negative or neutral) and semantic content were coded for all maternal utterances. Present analyses utilize a frequency count of utterances that included reference to positive or negative affect (either in the form of questions or statements).

Mothers also completed a self-report assessments of their depressive symptomatology (Center for Epidemiological Studies Depression Scale, CES-D). Infant temperament was assessed via the Infant Behavior Questionnaire-Revised, Short (IBQ-R).

Results

As anticipated, when given the opportunity to freely respond to their infants when faced with an ambiguous event, mothers provided predominately neutral or positive comments on the situation, and overwhelming utilized a positive tone of voice when addressing their child (Table 1).

Correlational analyses revealed that mothers relatively infrequent references to negative affect (or use of a negative tone of voice) were positively associated with their own depressive symptomatology. Conversely, there was a negative correlation between maternal references to negative affect and infant temperamental negativity (temperamental fear and sadness along with the negativity composite variable (Table 2).

Results

Table 1. Frequencies of utterance types and affective tone of voice

	Mean	SD	Range
Utterances Referencing Positive Emotion	2.78	4.50	0-22
Utterances Referencing Negative Emotion	.67	1.16	0-6
Semantically Neutral Utterances	16.98	13.24	0-54
Utterances with Positive Tone of Voice	17.35	14.58	0-68
Utterances with Negative Tone of Voice	.09	.48	0-4
Utterances with Neutral Tone of Voice	3.21	3.83	0-16

Table 2. Bivariate correlations between infant/maternal characteristics and utterance types.

	Negative Vocal Tone	Statements of Negative Affect	Questions Referencing Negative Affect	Semantically Negative Utterances Combined	Affectively Negative Utterances: All Types
Depressive Symptomatology: Clinical Cut-off	.28**	.02	.21*	.17	.25*
Depressive Symptomatology: Summary Score	.38**	.06	.17	.16	.29*
Infant Temperamental Sadness	-.11	-.04	.16	.09	.05
Infant Temperamental Fear	.10	-.22*	-.07	-.19	-.14
Infant Temperamental Negativity (Composite)	-.05	-.25*	.07	-.11	-.11

* $p < .05$, ** $p < .01$

Regression analyses were conducted in order to test the relative influence of infant temperamental variables and maternal depressive symptomatology on mothers' negative utterances (both semantic and tone of voice, and a combination of both) (Figures 2-3).

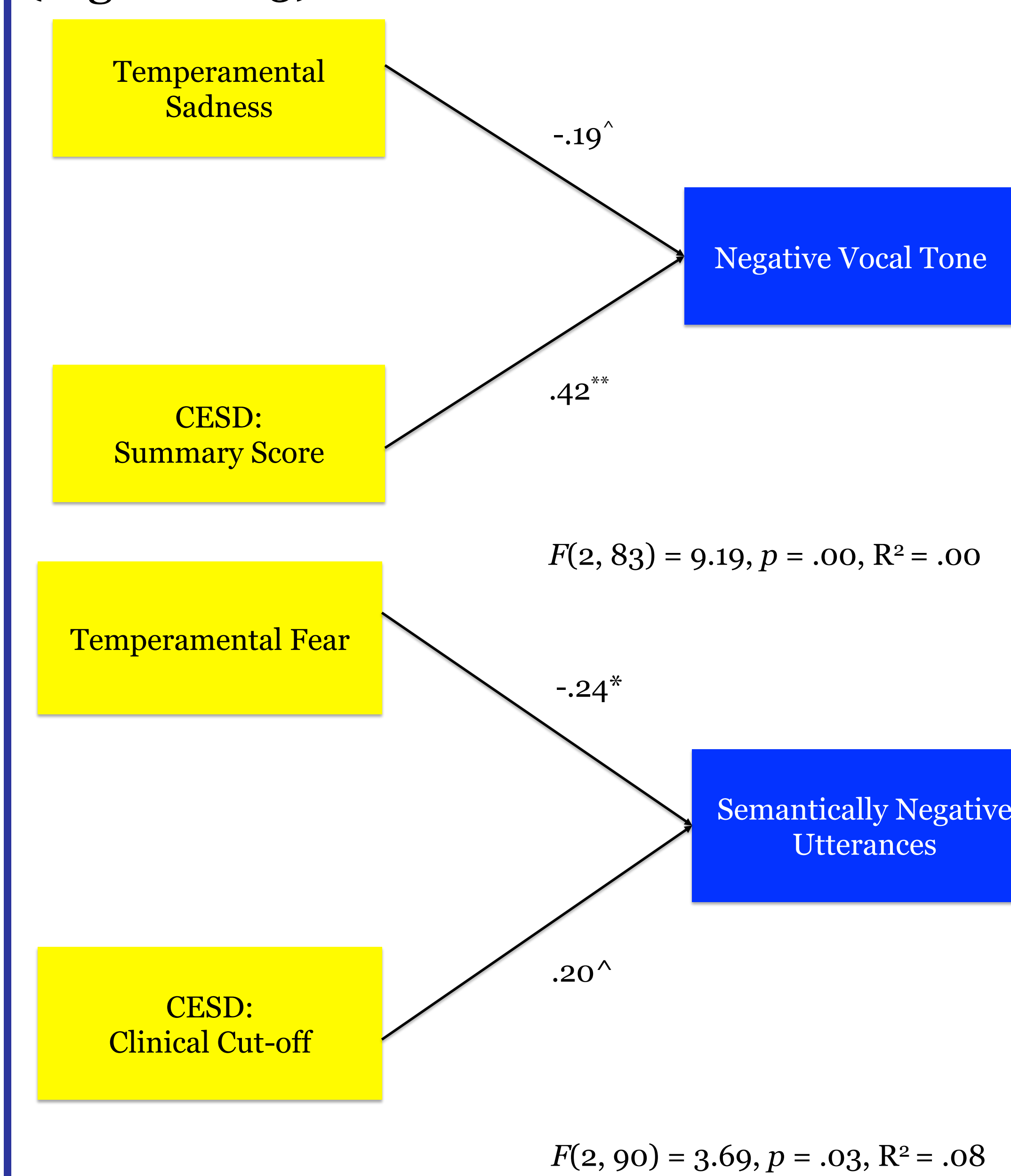


Figure 2. Linear regression predicting negative vocal tone and semantically negative utterances. ^ $p < .1$, * $p < .05$, ** $p < .01$

Results

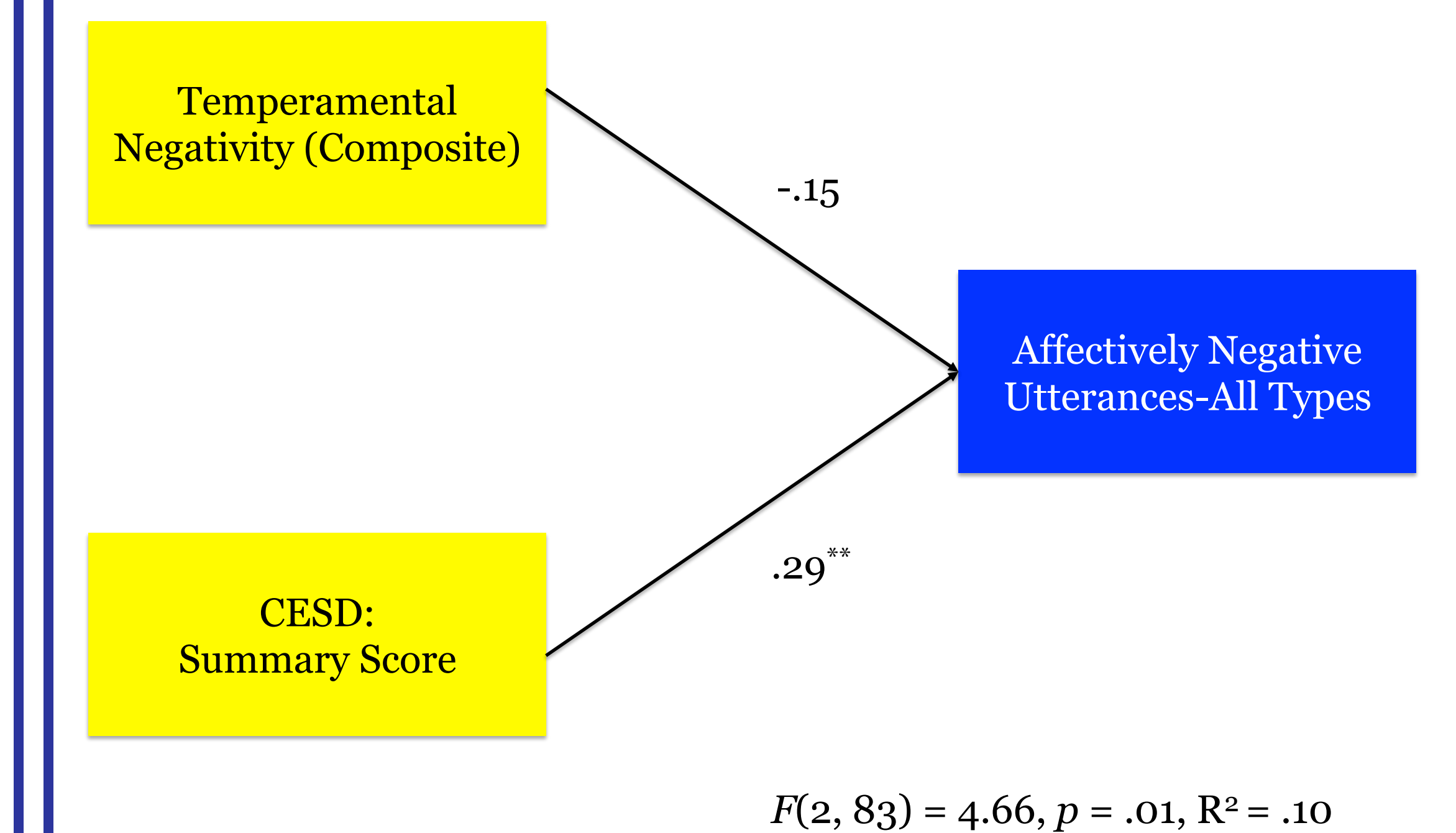


Figure 3. Linear regressions predicting overall affective negativity. ** $p < .01$

Conclusions

The present study offers a compelling demonstration of how mothers provide information to their infants during an ambiguous event and how these responses differ from the standard social referencing manipulation. Although mothers were overwhelmingly positive in their interactions with their infants, individual differences did emerge, with mothers high in depressive symptomatology predictably expressing more negative affect. Of interest, the majority of these references to negative affect came in the form of identifying the child's own negative emotions ("You are scared of the toy!") and did not actually refer to the mother's feelings.

Mothers also altered their behaviors based on their perceptions of infant temperament, providing fewer negative signals to infants who were temperamentally inclined towards negativity. Interestingly, the relationship between infant temperamental negativity and actual infant affect during this task was non-significant ($r = -0.03$, $p = ns$; $r = -0.01$, $p = ns$), suggesting that maternal behavior is more strongly associated with her perceptions of how her infant might respond, and not her infant's actual responses. Alternatively, it may be that mothers of temperamentally wary babies are particularly effective at preventing their infant's distress, by modifying their own affective responses. Distinguishing between these two explanations is a promising area for future investigation.