

Continuity of Infant Behavior under Stress:

Examining the Relation between the Still Face Paradigm and Strange Situation

Recently researchers have begun to investigate the relation between Still-Face Paradigm (SFP) and Ainsworth's Strange Situation (Adamson & Frick, 2003; Bates, Maslin, Frankel, 1985; Cohen, Campbell, & Ross, 1991; Braungart-Rieker, Courtney, & Garwood, 1999; Braungart-Rieker, Garwood, Powers, & Wang, 2001; Kogan & Carter, 1996). Thus far research has focused on infant's emotional and regulatory response to their mother's abrupt non-responsiveness (still-face) in the SFP and latter classification of attachment security.

Studies have found that infant's of mothers who were more responsive and sensitive to their infant's emotional state tended to be securely attached (e.g. Bates et al., 1995). Braungart-Rieker and colleagues (1999, 2001) also found infants who employed more self-regulatory behaviors and displayed less distress during still-face were more likely to be securely attached at 12 months. One explanation is that infants of sensitively responding parents were able to seek comfort in times of distress which then led to the capacity to self-regulate.

The purpose of this study was to examine the continuity of infant response to a stressful situation. Specifically we hypothesized that the tendency for an infant to seek reassurance from his mother in a stressful situation at 6 months would predict the tendency to do so at 13 months.

The participants of this study (24 boys, 27 girls) were from a larger longitudinal study of predominantly white, working-class to middle-class participants. At 6 months, mother-infant dyads participated in the standard SFP (Tronick et al., 1975). At 13 months, the dyads participated in the Ainsworth Strange Situation paradigm.

Six-month measures. All variables were coded on .25s intervals. To account for variation in the length of the still-face portion of the task, frequency variables were converted to the rate

per 30s. Seeking reassurance during still-face was operationalized as the rate and average length of looks at mother's face ($r = .07, n.s.$) and/or to her body ($r = .15, n.s.$). Distress was coded on a 4-point scale from non-distress to cry. For these analyses distress was the standardized composite of the proportion of time distressed, latency to first distressed vocalization (reversed), and most distressed vocalization (average $r = .63, p < .01$).

Thirteen-month measures. The Ainsworth Attachment behavior scales (contact maintenance, proximity seeking, resistance, and avoidance) from the two reunion episodes (5 and 8) served as indicators of seeking reassurance. Distress was the average number of intervals that the infant fussed or cried during the entire task.

Initial correlations indicated no relationship between the rate of looks to mother's face or duration of looks to mother (face or body) at 6 months and later behavior in the Strange Situation (all r s $< .22, n.s.$). However the greater rates of looks to mother's body at 6-months was associated with more contact maintenance ($r = .51, p < .01$), more contact resistance ($r = .33, p < .05$), and less proximity avoidance ($r = -.35, p < .05$). Distress at 6-months being was associated with more distress at 13-months ($r = .37, p < .01$), more contact maintenance ($r = .34, p < .05$) and contact resistance ($r = .28, p < .05$). Concurrently, more distress during the Strange Situation was associated with more contact maintenance ($r = .72, p < .01$), more contact resistance ($r = .55, p < .01$), more proximity seeking ($r = .51, p < .01$), and less proximity avoidance ($r = -.51, p < .01$).

Multiple regression analyses were used to test the hypothesis that seeking reassurance at 6-months would predict reassurance seeking at 13-months. Only concurrent distress predicted contact resistance, proximity seeking, and proximity avoidance in the Strange Situation (Table).

More contact maintenance was predicted by greater levels of concurrent distress as well as more frequent looks to mother's body at 6-months during still-face.

To our knowledge this is the first study examining behaviors observed during still-face and behaviors observed during Strange Situation. Contrary to expectation, the rate of looks to mother's face during still-face at 6-months was not associated with reassurance seeking behaviors at 13-months. However, the rate of looks to mother's body during still-face was predictive of greater contact maintenance at 13-months. One possibility is that looking at mother's body actually occurred when the infant was distressed and reaching towards her. If this were the case, then looks towards the mother's body may be a more powerful predictor of the child's current and subsequent reliance on maternal regulation of distress than looks towards mother's face. On-going analyses are placing these findings within a larger framework that is systematically exploring the continuity of individual differences in infant and mother behaviors in the SFP and Strange Situation in an effort to better understand the complex relation between maternal and self-regulation of infant distress.

Table. Multiple Regression Tests of the Continuity of Reassurance Seeking Behavior.

Variable	Model				
	<i>B</i>	<i>SE B</i>	β	<i>adj R</i> ²	
<i>Contact Maintenance</i>				.54	19.95**
Distress – 13m	.07	.01	.61**		
Distress – 6m	-.08	.14	-.07		
Looks to mom’s body – 6m	.78	.31	.32*		
<i>Contact Resistance</i>				.32	8.46**
Distress – 13m	.06	.01	.56**		
Distress – 6m	.02	.16	.02		
Looks to mom’s body – 6m	.18	.35	.08		
<i>Proximity Seeking</i>				.22	5.60**
Distress – 13m	.06	.02	.49**		
Distress – 6m	-.05	.17	-.04		
Looks to mom’s body – 6m	.25	.38	.11		
<i>Proximity Avoidance</i>				.19	4.98**
Distress – 13m	-.04	.01	-.39*		
Distress – 6m	-.08	.15	-.09		
Looks to mom’s body – 6m	-.24	.33	-.12		

Note. *df* (3, 45), $p < .01^{**}$, $p < .05^{*}$