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## **VI. THE RELATIONSHIP BETWEEN QUALITY OF ATTACHMENT AND BEHAVIOR PROBLEMS IN PRESCHOOL IN A HIGH-RISK SAMPLE**

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Bowlby (1969/1982b, 1973, 1980) has eloquently described how an infant's relationship with the primary caregiver lays the groundwork for later social-emotional development. The patterning of the early attachment relationship is the foundation on which later representational models of self and attachment figure are constructed. Such models strongly influence the ways in which a child relates to others, approaches the environment, and resolves critical issues in later stages of development. In Bowlby's words, a person who has formed a secure attachment "is likely to possess a representational model of attachment figure(s) as being available, responsive, and helpful and a complementary model of himself as at least a potentially lovable and valuable person" (Bowlby, 1980, p. 242). The securely attached child, with positive expectations of self and others, is more likely to "approach the world with confidence and, when faced with potentially alarming situations, is likely to tackle them effectively or to seek help in doing so" (Bowlby, 1973, p. 208).

In contrast, infants whose emotional needs have not been consistently or adequately met come to view the world as "comfortless and unpredictable; and they respond either by shrinking from it or doing battle with it" (Bowlby, 1973, p. 208). Bowlby proposes that disturbances of the attachment

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relationship are the main cause of psychopathology characterized by chronic anxiety or distrust, placing children doubly at risk. First, they render the child less able to cope with later adverse experiences, and, second, they increase the likelihood that the child will behave in such a way as to bring about more adverse experiences (Bowlby, 1982a).

Erikson (1963), Mahler (Mahler, Pine, & Bergman, 1975), and Sander (1975) have provided theoretical frameworks that complement and extend Bowlby's. These theorists emphasize that the resolution of issues or crises during earlier developmental stages paves the way for optimal adaptation during subsequent periods. For example, infants who have successfully negotiated the issue of "basic trust," "symbiosis," or "focalization" (all counterparts to Bowlby's secure attachment) are better prepared to move forward toward more autonomous functioning. Their ability to explore the environment and to evolve new patterns of interaction and communication within the safety of the child-caregiver relationship promotes greater self-reliance during the toddler period. Likewise, toddlers who have negotiated the movement toward autonomous functioning in the context of parental support can face an ever widening world with increasing confidence and enthusiasm. Mastery of object skills, confident expectations concerning others, and a history of positive social exchanges all promote successful peer relations during the preschool period. Thus, beginning with attachment issues in infancy, each developmental period sets the stage for how the child adapts to the developmental tasks of the next period (Sroufe, 1979).

Such coherence of individual development applies not only to optimal patterns of adaptation but to maladaptive patterns as well. Thus pronounced difficulties with impulse control, aggression, and other antisocial behaviors, prolonged emotional dependency, and extreme difficulty in relating to other children may be linked to adaptational failures during earlier periods when the major developmental issues were attachment and autonomy.

The empirical base for these theoretical propositions began with Ainsworth's method for assessing the quality of infant-caregiver attachment—the Ainsworth Strange Situation procedure (Ainsworth et al., 1978). Individual differences assessed using Ainsworth's procedure have predicted various aspects of functioning at subsequent ages. Securely attached infants were found to be more cooperative at 22 months with mother and another adult (Main, 1973), more enthusiastic, persistent, affectively positive, and compliant in problem solving at age 2 (Matas et al., 1978), more socially competent with peers at age 3½ (Waters et al., 1979), and more ego resilient at age 5 (Arend et al., 1979).

The studies cited above have used middle-class families in which relationships and life circumstances tend to be stable and continuity of development is found with relative ease. The Minnesota Mother-Child Interaction

Project, from which the data presented in this chapter are derived, involves families from a lower socioeconomic background, where life circumstances are less stable and less continuity of development might be expected. With this sample of 267 socially and emotionally at-risk mother-child pairs, secure attachment also has been found to predict later competent functioning. Securely attached infants have been reported to be more sociable as toddlers (Pastor, 1981) and more compliant at age 2 with their mothers and at 4½ years with preschool teachers (Erickson & Crichton, 1981; Erickson, Farber, & Egeland, 1982), to have better self-control in the preschool (Egeland, 1983), and to be less dependent on preschool teachers (Sroufe et al., 1983). A special laboratory preschool for a selected subsample of children from the Mother-Child project afforded a unique opportunity to explore the roots of maladaptation and competence through an extensive, detailed study of these 40 children. The results of this project (Sroufe, 1983) provided striking evidence of the importance of a secure attachment to a child's competent functioning in subsequent years. Children securely attached as infants were found to be more ego resilient, independent, compliant, empathic, and socially competent; they had greater self-esteem and expressed more positive affect and less negative affect than did children who were anxiously attached as infants.

Furthermore, this study yielded some tentative evidence that helped to elucidate the often subtle differences between children exhibiting anxious/resistant (or ambivalent) and anxious/avoidant patterns of attachment in infancy. On the basis of teachers' descriptive statements about the children, independent coders were able to classify children as having been avoidant or resistant with notable accuracy. Consistent with theoretical predictions, children who had exhibited anxious/avoidant patterns of attachment in infancy were described by teachers as hostile, socially isolated, and/or disconnected (psychotic-like) in the preschool setting. This represents the defensive posturing one would predict for a child with an attachment figure who is rejecting, emotionally unavailable, or perhaps depressed. Such a child has difficulty relating to others and carries an underlying anger that he or she has not learned to express directly. Children who had been anxious/resistant in infancy were described by preschool teachers as impulsive and tense and/or helpless and fearful, patterns that are hypothesized to be the result of ambivalent/inconsistent or over-involved caregiving.

The study presented in this chapter is an extension of the Sroufe (1983) study to include an additional 56 subjects from preschools and day-care centers throughout the metropolitan area. By necessity, this extended study sacrifices some of the breadth and detail allowed by the relatively controlled setting of the laboratory school; but this study allows us to test the predictive power of early attachment in more natural, less ideal circumstances and across a variety of preschool settings.

In this study we wanted to test the hypothesis that children who were anxiously attached would be more likely to have behavior problems in preschool and to determine if the particular pattern of anxious attachment related to specific problem behaviors in the preschool. We also examined the exceptions to the predicted relationship. Specifically, we sought to identify child, parental, interactional, and environmental factors that account for behavior problems in preschool children who were securely attached at 12–18 months and factors that account for competent functioning among children who earlier had been anxiously attached.

## METHOD

### *Subjects*

A sample of 267 mothers was selected from primiparous pregnant women seen at the Minneapolis Public Health Clinic and considered to be at risk for later caretaking problems. Risk factors included low socioeconomic status, low educational level (41% had not completed high school at the time of baby's birth), age ( $\bar{X} = 20.5$ , range = 12–34), lack of support (62% single at the time of baby's birth), chaotic living conditions, and a high degree of life stress. Eighty-six percent of the pregnancies were unplanned. Eighty percent of the mothers were white, 13% were black, and 7% were Hispanic or Native American. Fifteen percent of the children were of mixed racial background.

At 4½–5 years of age, 96 of the children (52 boys, 44 girls) were observed in preschool. Forty children attended a special laboratory school at the University of Minnesota Institute of Child Development. (That school and the children who attended it are described in detail in Sroufe, 1983.) Fifty-six other children attended preschools or day-care centers throughout the Twin Cities metropolitan area. The findings presented in this chapter are based on these 96 children.

### *Procedure*

*Assessments of mother-child interaction.*—To assess quality of attachment, all children were videotaped at 12 and 18 months with their mothers in the Strange Situation (Ainsworth et al., 1978). Infants were classified as anxious/avoidant (Group A), securely attached (Group B), or anxious/resistant (Group C).

At 24 months the children were videotaped with their mothers in a series of four tool-using problem-solving tasks to assess how mother and

child were working together during this period of emerging autonomy. In each task a small toy or treat was visible inside a clear Plexiglas container but was accessible to the child only if he or she used a tool in a specific way to retrieve the prize. The last two tasks were too difficult for a 2-year-old to solve without help. The mother was instructed to help her child when she felt she needed to. These tasks were designed to tax the child in order to assess how the child makes autonomous efforts to solve the problems as well as how the child uses the mother for support and guidance in a potentially frustrating situation. Assessments of the mother focused on the emotional support she provided and the clarity, quality, and careful timing of the assistance she offered her child in these problem-solving tasks. Children were rated on a five-to-seven-point scale on the following dimensions: dependency on mother, noncompliance with maternal directions and suggestions, frustration and anger (toward mother and toward the environment in general), persistence in attempting to solve the problems, effectiveness of strategies used to cope with the challenges and frustrations of the situation, and enthusiasm for the tasks. Three-point scales provided global measures of positive and negative affect expressed by the child.

When the children were 42 months old, the mother-child pairs were observed in four tasks that were difficult enough to require that the mothers use some teaching strategies to enable the child to complete the tasks. In the first task, the child was asked to construct copies of a large wooden block, using smaller blocks of various shapes. In the second task, the mother asked the child to name as many things with wheels as he or she could think of. The child was required to place colored shapes in the correct spaces on a matrix in the third task. The final task involved using an Etch-a-Sketch to trace a maze drawn on its screen. Mothers were rated on seven-point scales on supportive presence (the warmth and encouragement provided to the child), respect for the child's autonomy, structure and the firmness and consistency of limit setting, hostility toward the child, quality of instruction (e.g., clarity of directions, timing of cues), and the overall sense of confidence conveyed by the mother's behavior toward her child in this situation. Children were rated, also using seven-point scales, on the following variables: persistence, enthusiasm for the tasks, anger/negativity (toward the mother and/or the environment in general), compliance with maternal suggestions and directions, reliance on mother for help and encouragement, affection for mother, avoidance of mother, and general quality of experience for the child in this situation. Mother and child both were rated by two observers whose scores were added together, yielding scores ranging from 2 to 14. In cases where observers disagreed by two or more points, ratings were decided by conference and/or a third observer.

*Assessments of environmental influences.*—When the children were 30 months of age, observers visited the home and completed the Caldwell

(1979) HOME Inventory, which assesses the quality of the home environment and the degree of stimulation provided for the child. This inventory assesses the mother's responsiveness to her child, avoidance of restrictions in the environment that might impede the child's development, organization of the home environment, provisions of age-appropriate play material, degree of the mother's involvement with the child, and opportunities for the child to engage in a variety of activities.

When their children were 30, 42, and 48 months old, mothers completed the Life Events Scale (Egeland, Breitenbucher, & Rosenberg, 1980). This scale rates the occurrence of 44 events typically considered to be stressful. Items deal with such things as financial problems, moving, divorce, increased arguments with a friend or relative, chemical use, and illness or death in the family.

Based on interview data gathered from the mothers when their children were 18, 24, 30, 42, and 48 months old, ratings were made of the quality of emotional support and help with parenting available to the mother from husband, friends, and relatives. Interview data also was used to classify mother's primary relationship as intact (living with steadily from the time the child was 18 to 48 months of age) or not intact.

*Assessments of mother.*—To obtain an estimate of mother's intellectual functioning, the following three subtests from the Wechsler (1981) Adult Intelligence Scale were administered to the mothers when the children were 48 months old: comprehension, similarities, and block design.

At the same time, the mothers completed the Profile of Mood States Inventory (McNair, Lorr, & Droppleman, 1971), which yields measures of the mother's perceived tension, depression, anger, vigor, fatigue, and sense of confusion or bewilderment; the Institute for Personality and Ability Testing (IPAT) anxiety scale (Cattell & Scheier, 1963); and a self-report depression scale (Radloff, 1977).

*Child assessments.*—To assess the child's cognitive functioning the Bayley (1969) Scales of Infant Development were administered to the children when they were 24 months old. At 42 months they were given the Preschool Language Scale (Zimmerman, Steiner, & Pond, 1979), which assesses auditory comprehension and verbal expression and yields an overall language quotient.

*Preschool assessments.*—When the children were 4½–5 years old, they were observed in their preschool or day-care setting on at least two days in a variety of teacher-directed and free-play activities. Using seven-point scales, observers rated the children on the following dimensions: agency (how confidently and assertively the child approaches tasks and classroom activities), ego control (how the child monitors impulses and modulates his or her responses to stimuli in the preschool environment), dependency on teachers for support and nurturance, social skills in the peer group, positive affect,

negative emotional tone, and compliance with teachers' directions and suggestions. All coders were blind to attachment history.

To provide more specific information about behaviors typically exhibited by these children in preschool, and particularly to identify children who were seen by their teachers as having behavior problems, a teacher or child-care provider completed the Preschool Behavior Questionnaire (Behar & Stringfield, 1974). This measure consists of 30 items often associated with socioemotional problems in young children. The teacher was asked to check for each item: (1) does not apply (scored one point); (2) applies sometimes (two points); or (3) certainly applies (three points). Teachers also completed the 31-item Behavior Problem Scale written by our staff (Erickson & Egeland, 1981), using the same format as was used for the Behar and Stringfield measure.

## RESULTS

The Preschool Behavior Questionnaire (Behar & Stringfield, 1974) and our own Behavior Problem Scale were factor analyzed separately, yielding five major factors for each of these measures. The major factors of the Preschool Behavior Questionnaire were as follows: (1) hostility (items loading heavily on this factor included fights, bullies, is irritable, kicks, and hits); (2) hyperactivity/distractibility (squirring, inattentive, poor concentration); (3) gives up, cries easily; (4) nervous habits (twitches, bites nails); and (5) worried, unhappy. On the Behavior Problem Scale the major factors included (1) exhibitionistic/impulsive (verbally aggressive with peers, shows off, is impulsive); (2) withdrawal (little interest, passive, tired, does not play); (3) repetitive movements, self-abuse; (4) shy, anxious (shy, overly fearful, clings); and (5) sulks, does not accept criticism, tantrums.

### *Comparison of Attachment Groups on Preschool Measures*

One-way analysis of variance, with Student-Newman-Keuls post hoc comparisons, was used to compare anxious/avoidant, anxious/resistant, and securely attached children on the seven preschool rating scales and on the factors derived from the Preschool Behavior Questionnaire and our own Behavior Problem Scale. These analyses included only those children whose attachment classification remained the same from 12 to 18 months. Results are presented in Table 1 and are described here.

Anxious/resistant infants were rated by observers in preschool as being less agentic (confident, assertive) and as having poorer social skills than securely attached infants. Anxious/avoidant children were rated by observers as being more dependent on teachers and having poorer social skills

TABLE 1  
 MEAN SCORES FOR STABLE ATTACHMENT GROUPS ON PRESCHOOL VARIABLES

	Anxious/ Avoidant ( <i>N</i> = 10)	Secure ( <i>N</i> = 40)	Anxious/ Resistant ( <i>N</i> = 10)	<i>F</i> Value	<i>p</i>	Contrast
Conferenced observers' ratings:						
Agency .....	3.90	4.50	3.20	3.43	.04	B > C
Ego control .....	3.90	4.35	4.50	.66	.52	...
Dependency .....	4.10	2.70	2.90	3.86	.03	A > B
Social skills .....	3.20	4.05	3.10	3.66	.03	...
Positive affect .....	4.20	4.73	4.20	.88	.42	...
Negative emotion .....	3.60	2.53	2.10	2.32	.11	...
Compliance .....	4.30	5.58	5.60	3.53	.04	...
Preschool Behavior Questionnaire (factors):						
Hostility .....	.25	-.15	-.71	3.36	.04	A > C
Hyperactive						
inattentive .....	.11	-.16	.28	1.56	.22	...
Gives up, cries .....	.59	-.24	.13	4.29	.02	A > B
Nervous habits .....	-.27	-.02	.32	1.31	.28	...
Worried, unhappy .....	.02	-.12	-.12	.10	.91	...
Total .....	53.00	41.26	44.45	6.25	.003	A > B, C
Behavior-problem scale (factors):						
Exhibitionistic, impulsive .....						
	.66	-.23	-.39	5.32	.008	A > B, C
Withdrawal .....	.95	-.05	.35	4.00	.02	A > B
Repetitive movements, self-abuse .....						
	-.04	-.08	-.15	.09	.92	...
Shy, anxious .....	.26	-.01	.52	1.45	.24	...
Sulks, tantrums .....	.05	-.16	-.39	.76	.47	...
Total .....	49.50	40.29	41.73	6.82	.002	A > B, C

than securely attached children. Even though the post hoc comparisons were not significant, the anxious/avoidant children were less compliant with teachers' instructions and rules and expressed more negative emotion (e.g., whining, pouting, angry outbursts) in the classroom than both anxious/resistant and securely attached children.

The analyses based on the teachers' ratings indicated that anxious/avoidant children were more withdrawn and gave up more easily than securely attached children. These children were seen by their teachers as more exhibitionistic and impulsive than children in the other attachment groups and as more hostile than anxious/resistant children. Anxious/avoidant children received higher total scores on both the Preschool Behavior Questionnaire and our Behavior Problem Scale than either anxious/resistant or se-

curely attached children, suggesting more and varied behavior problems in that group.

### *Behavior-Problem Groups*

From the 96 children observed in preschool, three groups of children with behavior problems were identified: acting out ( $N = 17$ ; 11 boys, six girls), withdrawn ( $N = 7$ ; three boys, four girls), and attention problems ( $N = 3$ ; all boys). A group of children virtually free from behavior problems and functioning competently in preschool ( $N = 22$ ; 12 boys, 10 girls) was selected from the same sample. Because a high-risk sample such as ours tends to have a high incidence of behavior problems, we chose not to use a predetermined cutoff point (e.g., one standard deviation above the mean) for selecting these groups. Such a procedure would have excluded some children who clearly do have behavior problems. Instead, selection was based on the scores children received from their teachers on specific items from the Preschool Behavior Questionnaire (Behar & Stringfield, 1974) and the Behavior Problem Scale (items that loaded most heavily on factors relevant to these behavior problems) and was corroborated by observers' ratings on the seven-point scales (agency, ego control, etc.) described earlier.

Children in the acting-out group were described on the checklists by their teachers as disobedient, inconsiderate, easily irritated, verbally aggressive with peers and/or adults, and fighting with or bullying other children. Observers rated them as noncompliant, often high on negative emotion, and usually low on social skills. Withdrawn children were described by teachers as passive, showing little interest in their surroundings, usually not engaging in play, and sometimes daydreaming. Observers rated these children notably low on agency, social skills, and positive affect. Children in the attention-problem group were characterized by their teachers as squirmy, inattentive, and having poor concentration. Although their teachers saw them as impulsive, they were relatively obedient, cooperative, and nonaggressive with peers and adults.

Children for whom there was any doubt as to the presence or absence of behavior problems were not included in any group. For example, a child who received a 3 ("certainly applies") on only one item relevant to the acting-out pattern and several 2's ("sometimes applies") was included only if observers' ratings strongly suggested problems (e.g., a compliance rating of 4 or below and a negative emotion rating of above 4 on a seven-point scale). Or if a child received mostly 1's and some 2's on selected checklist items, suggesting an absence of behavior problems, but ratings from observers suggested a lack of competence (e.g., unduly high dependency, very low social skills), that child was not included in the well-functioning group. Thus

children in the behavior-problem groups were seen by both teachers and observers as functioning poorly in the preschool setting, and children in the well-functioning group were viewed by both teachers and observers as being free of behavior problems.

*Attachment Classification in Infancy and Membership in Behavior-Problem Groups in Preschool*

Chi-square analysis of these combined behavior-problem groups by attachment classification at both 12 and 18 months was significant ( $p = .001$  and  $.04$ , respectively; for children whose attachment classification was the same at 12 and 18 months,  $p = .01$ ) and confirmed the hypothesis that children who were anxiously attached were more likely to have behavior problems in preschool. Of particular interest was how accurately preschool group membership was predicted for children who were classified as anxiously attached at both 12 and 18 months (stable anxious), children who were securely attached at both times (stable secure), and children who were classified as secure at one time and anxious the other (mixed). Results of this analysis are not surprising. Of 16 stable anxiously attached children, only two were in the well-functioning group in preschool. In contrast, 15 of 22 stable secure children were in that group. And for children with mixed classification, preschool group membership was hard to predict: four of 10 were in the group without behavior problems. When analyzed separately by sex, the results were the same.

*Factors Accounting for Exceptions to the Predicted Relationship between Attachment and Preschool Behavior*

While the results thus far clearly indicate the importance of quality of attachment as a predictor of behavior in preschool, we were interested in examining the exceptions to the predicted relationship: Why did some securely attached children show behavior problems in preschool ( $N = 8$ ), and why did some anxiously attached children appear competent in preschool ( $N = 6$ )? Specifically, we wanted to determine which child, parental, interactional, and environmental factors account for behavior problems in children who were securely attached and which factors account for competent functioning among the anxiously attached children. First, securely attached children with behavior problems (acting out, withdrawn, and attention problems were combined) and securely attached children without behavior problems were compared on a number of variables assessed when the children were 18, 24, 30, 42, and 48 months of age. Then anxiously attached children with and without behavior problems were compared on these same

measures. (In order to have groups large enough for analysis, attachment groups were based on classification at 18 months.) Results are presented in Tables 2–4 and are described here.

*Mother-child interaction.*—Patterns of interaction in the 24-month tool-using tasks and the 42-month teaching tasks were important in accounting for differences between securely attached children with and without behavior problems and anxiously attached children with and without behavior problems (Table 2). Among securely attached children, those with behavior problems tended ( $p = .06$ ) to express more negative affect at 24 months, and their mothers provided less support and encouragement ( $p = .02$ ) as the children attempted the problem-solving tasks. In the 42-month teaching tasks, mothers of securely attached children with behavior problems gave less clear and structured directions, were less firm and consistent in setting limits, and were judged to be less confident in their ability to deal effectively with their children. The behavior-problem children expressed less affection and were more avoidant of their mothers in the teaching task situation than were securely attached children without behavior problems. The overall quality of experience in the teaching tasks tended to be poorer for the behavior-problem group than for the children without behavior problems.

Among anxiously attached children (anxious/resistant and anxious/avoidant combined), those who did not have behavior problems in preschool had tended to look more enthusiastic in the 24-month tool-using tasks but otherwise did not differ from the behavior-problem group at age 2. Ratings of maternal behaviors in the 2-year tool tasks did not discriminate between groups. However, there were significant differences among groups on all maternal behaviors and most child behaviors in the 42-month teaching situation. Mothers of anxiously attached children who did not have behavior problems were more respectful of the child's autonomy; were more supportive; provided clearer structure and firm, consistent limits; were less hostile; provided clear, well-timed instruction; and seemed confident that they could work with the child in this situation. These children were persistent in their attempts to solve the tasks, were compliant with their mothers' instructions, expressed affection for their mothers, and had a generally positive experience with their mothers in this setting.

*Environmental influences.*—Comparison of children with and without behavior problems suggests that the degree of stimulation provided in the home, as measured by the Caldwell HOME Inventory, is important in accounting for group differences (Table 3). The securely attached children who had behavior problems in preschool came from homes where fewer age-appropriate play materials were provided than were provided to securely attached children without behavior problems. Mothers of these children also were less involved with their children in the home. Among securely attached children there were no differences between children with

TABLE 2

## COMPARISON OF CHILDREN WITH AND WITHOUT BEHAVIOR PROBLEMS: MOTHER-CHILD INTERACTION VARIABLES

VARIABLE	SECURELY ATTACHED (18 Months)			ANXIOUSLY ATTACHED (18 Months)				
	With Behavior Problems (N = 8)	Without (N = 16)	t Value	p	With Behavior Problems (N = 19)	Without (N = 6)	t Value	p
24-month tool using:								
Maternal:								
Support.....	3.60	5.15	2.58	.02	3.78	4.40	-.85	.41
Quality of assistance.....	3.80	4.53	1.50	.15	3.87	4.20	-.48	.64
Child:								
Dependency.....	3.80	2.53	-1.46	.16	3.53	3.67	-.16	.88
Noncompliance.....	3.60	3.00	-.75	.46	3.79	2.83	1.29	.21
Frustration.....	3.40	2.40	-1.01	.33	3.53	3.17	.36	.72
Persistence.....	2.80	3.33	.77	.45	2.50	2.50	-.05	.96
Coping.....	4.00	4.27	.30	.77	3.26	3.67	-.50	.62
Enthusiasm.....	8.60	8.64	.03	.98	6.79	9.00	-1.83	.08
Positive affect.....	1.80	1.71	-.25	.81	2.33	2.00	1.17	.25
Negative affect.....	1.60	1.07	-2.06	.06	1.78	1.67	.21	.83
42-month teaching tasks:								
Maternal:								
Respect for autonomy.....	9.43	11.06	1.70	.10	8.50	11.33	-2.85	.009
Supportive presence.....	7.86	10.38	1.86	.08	7.17	10.83	-2.79	.01
Structure/limits.....	9.14	11.31	2.17	.04	8.94	12.00	-2.49	.02
Hostility.....	3.14	2.75	-.57	.57	4.39	2.00	2.62	.02
Quality of instruction.....	7.71	11.50	3.45	.002	7.33	11.50	-3.18	.004
Confidence.....	7.86	10.94	2.31	.03	7.17	10.83	-2.61	.02
Child:								
Persistence.....	9.14	11.13	1.69	.11	7.28	10.67	-2.64	.02
Enthusiasm.....	8.00	10.06	-1.42	.17	6.83	9.00	-1.58	.13
Negativity.....	5.00	2.75	-1.51	.17	4.83	2.50	1.54	.14
Compliance.....	9.14	11.31	1.57	.13	7.28	10.50	-2.12	.05
Reliance on mother.....	6.86	6.25	-.57	.58	8.61	6.33	1.62	.12
Affection for mother.....	6.43	9.00	2.27	.03	6.50	9.83	-2.41	.03
Avoidance of mother.....	3.57	2.38	-2.90	.009	4.22	2.67	1.17	.25
Experience in session.....	8.14	10.56	1.94	.07	6.89	10.67	-3.14	.005

TABLE 3

## COMPARISON OF CHILDREN WITH AND WITHOUT BEHAVIOR PROBLEMS ON ENVIRONMENTAL VARIABLES

MEASURE/VARIABLE	SECURELY ATTACHED (18 Months)				ANXIOUSLY ATTACHED (18 Months)				
	With Behavior Problems		Without		With Behavior Problems		Without		<i>p</i>
		<i>t</i> Value		<i>p</i>		<i>t</i> Value		<i>p</i>	
<b>Caldwell HOME Inventory:</b>									
Responsivity of mother.....	9.00	-.26	8.75	.80	7.89	10.00	10.00	-1.35	.19
Avoidance of restrictions.....	3.86	-.09	3.75	.93	3.83	4.60	4.60	-.88	.39
Organization of environment.....	4.86	1.63	5.33	.12	5.17	5.60	5.60	-.89	.39
Provision of play material.....	8.43	3.09	10.93	.006	8.56	12.20	12.20	-2.70	.01
Maternal involvement.....	3.29	2.50	5.20	.02	3.28	5.60	5.60	-3.68	.001
Opportunity for variety.....	1.57	.46	1.87	.65	.78	.40	.40	.80	.43
Total.....	31.00	1.54	35.60	.14	29.50	38.40	38.40	-2.13	.05
<b>Life Events Scale:</b>									
30 months.....	9.88	-.91	7.75	.39	11.26	12.33	12.33	-.34	.74
42 months.....	10.33	-1.27	6.69	.22	9.47	7.40	7.40	.70	.49
48 months.....	7.75	-.39	7.00	.70	7.40	6.00	6.00	.80	.44
<b>Quality of emotional support available to mother:</b>									
24 months.....	4.29	.77	4.86	.45	3.56	4.50	4.50	-1.21	.24
30 months.....	4.38	.14	4.47	.87	3.72	4.33	4.33	-.93	.36
42 months.....	4.14	.46	4.47	.65	3.63	4.33	4.33	-1.09	.29
48 months.....	3.88	.89	4.40	.39	3.13	4.67	4.67	-2.67	.02

TABLE 4

## COMPARISON OF CHILDREN WITH AND WITHOUT BEHAVIOR PROBLEMS ON MOTHER AND CHILD VARIABLES

MEASURES/VARIABLE	SECURELY ATTACHED (18 Months)			ANXIOUSLY ATTACHED (18 Months)				
	With Behavior Problems	Without	<i>t</i> Value	<i>p</i>	With Behavior Problems	Without	<i>t</i> Value	<i>p</i>
<b>Maternal measures:</b>								
Age .....	20.63	21.19	.29	.77	20.74	20.33	.25	.81
Education.....	11.63	12.56	.93	.36	11.63	11.00	.88	.41
WAIS (3 subtests).....	37.00	35.06	-.29	.78	30.00	35.25	-1.07	.30
<b>Profile of mood states:</b>								
Tension.....	10.33	6.63	-1.15	.26	8.53	9.00	-.20	.85
Depression.....	7.67	6.25	-.35	.73	6.80	4.40	.74	.47
Anger .....	6.33	7.00	.08	.94	7.21	5.80	.40	.70
Vigor.....	19.17	16.19	-1.15	.26	16.53	14.33	.76	.46
Fatigue.....	7.17	9.50	.73	.47	7.67	5.67	.69	.50
Confusion.....	7.83	3.94	-2.95	.008	7.00	5.50	.71	.48
Depression inventory.....	11.83	9.63	-.57	.58	13.27	10.00	.86	.40
IPAT anxiety.....	39.00	27.81	-1.88	.07	43.25	34.20	1.32	.20
<b>Child language and DQ:</b>								
Bayley scales—24 months ..	92.29	111.88	2.56	.02	94.16	110.67	-1.97	.06
<b>Preschool language scale:</b>								
Auditory.....	100.71	123.00	2.22	.04	102.00	120.80	-2.09	.05
Verbal.....	105.57	119.25	1.19	.25	98.20	122.40	-3.02	.007
Language.....	103.29	121.88	1.81	.08	100.27	121.80	-2.86	.01

behavior problems and children without problems on scores on the Life Events Scale at 30, 42, or 48 months. Nor were there differences on the quality of emotional support available to the mother from husband, relatives, and friends. Chi-square analysis of securely attached children with and without behavior problems by groups whose mothers were involved in stable and unstable relationships approached significance ( $\chi^2 = 2.56, p = .11$ ). Of 11 children whose mothers lived with the same man from the time the child was 12–48 months of age, nine did not have behavior problems and two did. For securely attached children whose mothers were not involved in an intact relationship over that time period, six had behavior problems and six did not.

Among anxiously attached children with and without behavior problems in the preschool, results were similar. Anxiously attached children who did not have behavior problems came from homes rated by observers on the Caldwell HOME Inventory as providing age-appropriate play materials and characterized by a high degree of involvement between mother and child. A significant difference also was found on the total score for the Caldwell HOME Inventory. Anxiously attached children without behavior problems came from more stimulating home environments. Life Events scores did not discriminate between anxiously attached children with and without behavior problems. Quality of support available to mother at 24, 30, and 42 months did not discriminate among groups, but at 48 months mothers of children without behavior problems were judged to have more support from family and friends. Chi-square analysis of anxiously attached children with and without behavior problems by groups whose mothers had intact relationships (living with the same man from the time the child was 12–48 months of age) and those who did not was significant ( $\chi^2 = 6.40, p = .01$ ). Of four children whose mothers had intact relationships, only one had behavior problems. There were 20 anxiously attached children whose mothers did not have intact relationships, and 17 of those had behavior problems in preschool.

*Maternal measures.*—Mothers of children with and without behavior problems did not differ significantly as to age or level of education (Table 4). Nor were there significant differences between behavior-problem groups and children without behavior problems on mothers' scores on three subtests from the Wechsler Adult Intelligence Scale (Wechsler, 1981). Among securely attached children only the "confusion" score on the Profile of Mood States Inventory discriminated between mothers of children with and without behavior problems. Mothers of children with behavior problems reported more feelings of confusion, bewilderment, and disorganization than did mothers of children who did not have behavior problems. And mothers of securely attached children with behavior problems tended to score higher on the IPAT anxiety scale ( $p = .07$ ) compared to mothers of securely at-

tached children without behavior problems. Among anxiously attached children there were no significant differences on maternal measures.

*Child language and developmental quotient.*—For both securely and anxiously attached children there were significant cognitive differences between children with behavior problems and those who had no problems. Children without behavior problems obtained significantly higher scores on the Bayley Scales of Infant Development (Bayley, 1969) at 24 months and on the Preschool Language Scale (Zimmerman et al., 1979) at 42 months than did children who had behavior problems in preschool.

## DISCUSSION

As predicted, children who were anxiously attached as infants functioned more poorly in preschool than did children who were securely attached. That these differences were evident across such varied preschool settings and during relatively brief periods of observation makes these results even more powerful. Anxious/avoidant children differed most strikingly from the secure infants. They were observed to be highly dependent, noncompliant, and poorly skilled in social interaction with peers. Teachers described them as hostile, impulsive, giving up easily, and withdrawn. These children generally presented a picture of extensive and varied behavior problems in preschool.

While anxious/resistant children were similar to securely attached children on some measures (e.g., compliance rating, "worried" factor), these children also were functioning poorly. They lacked agency and the confidence and assertiveness necessary to engage the preschool environment effectively. And like the avoidant children, they tended to be incompetent in interactions with peers. While few of the post hoc contrasts showed significant differences between the avoidant and resistant children on individual variables, the results do suggest some differences that are consistent with theoretical predictions and the findings of the earlier study (Sroufe, 1983) mentioned in the introduction to this chapter. High scores on the hostility factor and the noncompliance rating scale fit the predicted pattern for anxious/avoidant children, while low agency ratings and high scores on the distractibility factor are consistent with the pattern of passivity and inattentiveness predicted for resistant children.

Some differences noted in the earlier study (Sroufe, 1983) with the subsample of 40 children were not evident in this study and possibly are a function of the relatively limited observation of the 56 children in the community preschools. The 40 children attending preschool classes at the university were made up exclusively of children from the Mother-Child project. Positive affect ratings did discriminate between anxious and secure children

in the laboratory school but did not discriminate among attachment groups for the total preschool sample of 96. And most notably, both anxious/resistant and anxious/avoidant children were found to be more dependent than securely attached children in the subsample of 40, while among the total sample of 96 children in this study who attended preschool only the anxious/avoidant were rated as more dependent. It is important to note here that the 40 children in the university preschool were observed daily for more than 6 weeks and that dependency was assessed with a variety of measures, whereas the only measure of dependency in this study was a rating based on two observations. Dependency can be manifested in many ways, and we believe that a more comprehensive assessment would have revealed dependent patterns of behavior in the resistant children in this larger sample as well. Generally, we do not feel that children with histories of avoidant attachment are more (or less) poorly functioning than those with histories of resistant attachment. Rather we feel that they will manifest different kinds of problems, in different ways, being more or less obvious in different contexts.

When groups of children who clearly had behavior problems were identified on the basis of teachers' ratings on behavior checklists and corroborated by observers' ratings, the predictive power of attachment classification was demonstrated most dramatically. Among the well-functioning groups, 16 of 22 had been securely attached. The majority of children in all three behavior-problem groups had been anxiously attached as infants. Both avoidant and resistant children were represented in all problem groups (acting out, attention problems, withdrawn), with no apparent tendency for either attachment group to fall into a particular problem group. This is not too surprising given the relatively broadly defined behavior-problem groups (and given the fact that avoidant and resistant children differed little on the single variables assessed in preschool). And it does not preclude the likelihood that the behaviors have different meaning or intent among resistant children than among avoidant children. For example, we might expect that the withdrawn behavior of avoidant children represents a psychological disconnection from others, whereas the resistant children's withdrawal would stem from passivity, weakness, or fearfulness.

Even though there is a strong relationship between quality of attachment and behavior problems in preschool, there are some exceptions. There were six anxiously attached children at 18 months who were competent in preschool, and there were eight securely attached children who had behavior problems in preschool. We examined certain child and mother characteristics, environmental stimulation, and life circumstances in an attempt to account for these exceptions. The results of the examination of change between quality of attachment at 18 months and functioning in preschool must be considered as tentative due to the small sample sizes. Nevertheless,

some coherent patterns did emerge. Among both securely attached and anxiously attached children, those without behavior problems were, on the average, functioning better cognitively than were children with behavior problems. It is likely that brighter children have an advantage in coping with the preschool environment. And perhaps brighter children tend to be easier for mothers to deal with effectively, thus eliciting better caretaking. But intelligence does not insure healthy functioning, nor does lower cognitive ability preclude healthy functioning. There were children of a wide range of cognitive ability in the behavior-problem groups and in the group without problems. We must look at other variables to explain further these differences in preschool behavior.

Children who were securely attached but presented behavior problems in preschool had mothers who appeared to be less effective in helping them negotiate subsequent stages of development. These mothers were less supportive of their children's efforts to solve problems at 24 months. They did not provide the warmth and encouragement their children needed to cope with a challenging, potentially frustrating situation. When engaging their children in a series of educational tasks at 42 months, they again failed to provide support and encouragement, and they were ineffective as teachers. They did not structure the tasks well, and they did not let the child know what was expected. Nor did they set firm, consistent limits when the child deviated from the task. While the securely attached children without behavior problems did not differ at 2 years from those with behavior problems, by 42 months they were less affectionate and more avoidant of their mothers.

At home at 30 months, securely attached children with behavior problems lacked age-appropriate play materials, and their mothers interacted with them less than mothers of children without behavior problems interacted with their children. When these children were 4 years old, their mothers reported feeling confused, bewildered, and disorganized. Perhaps these mothers were able to meet the needs of an infant but did not have the resources to cope with the ever-changing demands of the maturing, individuating child.

Among anxiously attached children with and without behavior problems, there were no differences on either the mother or the child variables at 24 months, but by 42 months they were remarkable. Mothers of children without behavior problems were respectful of children's autonomy, allowing the child to explore and attempt the tasks without maternal intrusion. They were warm and supportive, structured the tasks carefully, provided well-timed cues to help the child, and set firm, consistent limits but without being hostile. The mothers of anxiously attached children without behavior problems in preschool were confident that they could deal effectively with their children. The children were persistent in their efforts to accomplish the tasks, compliant with their mother's instruction, and affectionate toward

mother. As with securely attached children, the anxiously attached children without behavior problems came from homes where appropriate play materials were provided and mothers were involved actively with their children. These homes provided the stimulation necessary to foster healthy development. For anxiously attached children, emotional support available to mother from family and friends was important in accounting for differences between children with and without behavior problems. Mothers of children without behavior problems had better support when their children were four years old, and they were more likely to be involved in an intact, primary relationship, living with the same man from the time the child was 18–48 months of age. There were no differences between anxiously attached children with and without behavior problems on the occurrence of stressful life events.

In conclusion, quality of attachment at 12 and 18 months is a strong predictor of behavior in the preschool at age  $4\frac{1}{2}$ –5. That the child's experience with the attachment figure leads to expectations that influence the way the child organizes his or her behavior throughout the first 5 years of life is demonstrated clearly here. Furthermore, quality of attachment is an assessment of the quality of care and support provided in the first year of life (Ainsworth et al., 1978; Grossmann et al., in this vol.) and, as such, is also a predictor of subsequent care. We assume, in most cases, continuity of care and support across time, continuity that serves to perpetuate the expectations and the behavioral organization the child developed during the attachment phase. Thus, in cases where the outcome changes (that is, the quality of the child's adaptation or behavioral organization does not fit the predicted pattern), we expect that there were changes in the quality of care and support. The findings here provide some evidence to support that expectation. Where securely attached children developed behavior problems, there was a pattern of inadequate maternal care and support at subsequent stages of development. And where anxiously attached children became well functioning by preschool, their mothers were sensitive and responsive to the special needs of their children at later stages.

It appears that both securely and anxiously attached children who are competent in preschool have mothers who are sensitive to the demands of the task for the child at a particular age. At 2 they were aware of the child's need for emotional support, and they understood the requirements necessary for the child to succeed. At 42 months they were aware that, in order for the child to succeed, the situation needed to be structured and limits needed to be set in an appropriate fashion. The relationship between attachment and outcomes in preschool is obviously complex. One major factor that may make the anxiously attached child less vulnerable to later maladaptation is mother's emotional support and overall sensitivity. Even though the mothers of anxiously attached children apparently did not provide the sup-

port necessary to foster a secure attachment, the support they provided to the child from 24 to 42 months, accompanied by a stable family environment and improved support to the mother from family and friends, was enough to move the child toward healthy functioning in the preschool.

This does not lead us to conclude that effects of early experience are erased, even for this minority of subjects who changed substantially. Rather we would expect that children with early maladaptation, whose lives have improved, remain differentially vulnerable, at least for a time. Likewise we would expect that securely attached infants who are later showing maladaptation would rebound quickly should life supports again improve. This is a matter for ongoing research.