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Attachment, Positive Affect, and Competence in the Peer Group: Two Studies in Construct Validation

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WATERS, EVERETT; WIPPMAN, JUDITH; and SROUFE, L. ALAN. *Attachment, Positive Affect, and Competence in the Peer Group: Two Studies in Construct Validation*. CHILD DEVELOPMENT, 1979, 50, 821-829. 2 studies were undertaken to assess the positive affective correlates of secure attachment in infancy and to assess the relation between secure attachment in infancy and competence in the peer group at age 3½ years. In study 1, smiling and smiling combined with vocalizing and/or showing toys distinguished securely from anxiously attached infants during free play at age 18 months. Rated quality of affective sharing distinguished securely from anxiously attached infants during free play at 18 months and 24 months. Thus, secure attachment involves more than the absence of negative or maladaptive behavior directed toward a caregiver. Study 2 assessed cross-age, cross-situational, and cross-behavioral consistency in quality of social adaptation. Quality of infant-mother attachment relationships at age 15 months was related to Q-sort assessments of personal and interpersonal competence in the preschool play-group at age 3½ years. The results contribute to the validation of attachment as an important developmental construct. They also suggest that age appropriate assessment of developmental social competence constructs can be a useful alternative to the study of homotypic behavioral continuity.

In the last decade, study of the infant-mother attachment construct has had high priority in infant research. This work has been greatly facilitated by the demonstration that individual differences in attachment relationships observed at home can also be assessed in brief laboratory separation-reunion procedures (Ainsworth, Bell, & Stayton 1971; Ainsworth & Wittig 1969). The Ainsworth and Wittig "strange situation," in particular, has afforded useful tests of predictions about situational influences on attachment and exploratory behavior derived from ethological attachment theory. Similar procedures have also yielded valuable data on individual differences in the

organization of attachment behavior. Correlations between infant-mother interaction as early as 6-15 weeks after birth and strange-situation behavior at 12 months have tended to support Bowlby's (1969) hypothesis that attachment relationships arise from interaction rather than from drive reduction (e.g., Blehar, Lieberman, & Ainsworth 1977). In addition, recent studies have demonstrated that individual differences in attachment relationships can be highly stable from ages 12 to 18 months (Waters 1978; Connell, Note 1).

The ethological theory from which these studies arose emphasizes a close tie between

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attachment, exploration, affect, and effectance motivation. This in turn implies a relationship between quality of attachment in infancy and later competence (Ainsworth 1973; Ainsworth & Bell 1974; Sroufe & Waters 1977). A recent study by Matas, Arend, and Sroufe (1978) has shown a correlation between secure versus anxious attachment at 18 months and adaptive behavior in a tool-using, problem-solving situation at age 24 months. Securely attached infants were more enthusiastic, more persistent, more responsive to instructions, more affectively positive, less easily frustrated, and less oppositional than were anxiously attached infants in the 24-month follow-up assessment. Main and Londerville (Note 2) have also reported correlates of secure attachment in infancy in their assessments of free-play and interactive behavior during the second year of life. The competence correlates of secure attachment reported in these studies were not due to group differences in developmental quotient, although as expected there is a consistent tendency for securely attached infants to show a small advantage on standardized developmental tests by age 2. Finally, Lieberman (1977) has presented data suggesting a relationship between mother and child behavior in the home and peer competence, both assessed at age 3.

Studying external correlates and developmental consequences of secure attachment is important for several reasons. First, as a developmental construct, security of attachment can be validated only by confirming predicted external correlates. Second, the theory surrounding the developmental construct can be elaborated and better specified when the range of external correlates is well known. Finally, data on the developmental consequences of such a construct are important for studying continuity of individual adaptation.

At present, two aspects of attachment theory call for special priority in construct validation research. We need new information regarding the positive affective components of the attachment relationship and regarding the cross-behavioral, cross-situational, cross-age correlates of attachment in the competence domain. Positive affect is central to Bowlby's and Ainsworth's conceptualizations of the attachment construct. Still, positive affect has been somewhat neglected because of the greater importance of negative affect and behavior (especially avoidance and resistance to physical contact after separation) in assessing individual differences in the strange situation. Elaboration

of the positive affective components of secure and anxious attachment can serve the development of attachment theory and can also permit greater flexibility for assessing attachment beyond the infancy period.

Predicting strong cross-situational, cross-age correlates of attachment distinguishes attachment as an organizational construct from other models of infant behavior. In an organizational view, continuity in development is sought in patterns of individual adaptation with respect to age appropriate issues rather than in behavioral isomorphism across ages (Matas et al. 1978). Evidence that individual differences in attachment are related to later individual differences in a behavioral domain and context that does not involve an adult attachment figure would be evidence for the power of the attachment construct and against the argument that behavior is primarily under stimulus or contextual control (e.g., Masters & Wellman 1974).

In study 1, data on the strange-situation behavior of infants at 18 months of age and on the free-play behavior of infants at age 2 were examined. We tested the hypothesis that secure attachment would be associated with distinctive patterns of positive affective expression spontaneously directed toward an attachment figure during exploration and play prior to separation. This study was a prerequisite for study 2 in which assessments of secure and anxious attachment had to be made partly on the basis of pre-separation behavior. In study 2 we took advantage of available data from an independently conceived longitudinal study of competence to assess the relationship between security of attachment at 15 months and two aspects of competence in the nursery school at age 3½ years. Both studies were important for expanding the network of relationships required to validate the attachment construct.

Study 1

In Ainsworth's widely used strange-situation procedure (Ainsworth, Blehar, Waters, & Wall 1978; Sroufe & Waters 1977), individual differences are assessed primarily in terms of reunion behavior following two brief separations. Greeting behavior and interaction across a distance are considered, as is active proximity seeking and contact maintenance when the infant is distressed. But negative signs, such as active avoidance, continued petulance and crying, squirming or pushing away from the mother

during reunion are of special importance in distinguishing between securely and anxiously attached infants. Securely attached infants do not manifest these negative signs and are active in reestablishing either physical or interactive contact upon reunion. The emphasis on reunion behavior highlights an important aspect of security in the attachment relationship: the ability to derive comfort from the caregiver when stressed and the ability to use renewed closeness to support further exploration and mastery.

Study 1 tested the hypothesis that a secure attachment relationship, revealed primarily by the ability to reestablish contact following the stress of separation, would also be associated with positive affective exchanges in the absence of stress. Infants classified as securely or anxiously attached at 18 months were observed prior to separation at 18 months and in a free-play situation 6 months later.

Subjects

Subjects were white middle-class infants and their mothers who had been recruited from a file of birth announcements and seen in the Ainsworth and Wittig strange-situation procedure at age 18 months (Matas et al. 1978). Videotapes of 36 subjects (18 males) were available for the analysis of pre-separation behavior at 18 months. Thirty of these subjects (18 males) and an additional 15 subjects (five males) recruited from the same population were subsequently videotaped in a free-play situation at age 24 months.¹

Procedure

Individual differences in quality of attachment at 18 months had been assessed previously, and infants were classified as securely attached (Group B), avoidant (Group A), or resistant (Group C). Avoidance involves looking, turning, pulling, or moving away from or ignoring the caregiver on reunion. Resistance involves mixing clear contact seeking with resistance to contact or an inability to be comforted by the caregiver on reunion. Securely attached infants are active in seeking proximity or interaction upon reunion and are readily settled by such contact (see Ainsworth et al. 1978 and Sroufe & Waters 1977, for details). Classification agreement between two independent coders was .88 for the entire sample (see Matas et al. 1978).

Resistant infants (Group C) tend to cry and/or seek contact even prior to separation. This behavior is largely incompatible with expressions of positive affect. Neither avoidant nor securely attached infants show distress prior to separation and both actively manipulate the toys provided in the strange situation. Thus, a comparison between avoidant (Group A) and securely attached infants (Group B) is of special importance in order to avoid confounding attachment classification with the positive affective signs emphasized here.

Eighteen-month assessment of affective sharing.—From videotapes of the initial 3-min pre-separation period of the strange-situation procedure, "affective sharing" was assessed on three levels. First, presence or absence of smiling, looking, vocalizing, showing or giving toys to the mother, individually or in combinations, at any time during the 3-min period (regardless of frequency) was scored. As an index of positive affect, smiling was expected to distinguish among the groups. Combinations of affectively positive distance interactive behaviors (smile + show, smile + show + vocalize) were viewed as stronger signs of positive affect and were expected to reveal even stronger differences between securely and anxiously attached infants. Finally, the quality of affective sharing was assessed, using a three-point rating scale. Criteria for a high score on this scale included qualitative aspects of affective and verbal exchanges (broad smile; accompanying motor activity; laugh, excited, rising inflection), the infant's initiative in the interactions, and the interest and enthusiasm shown in exchanges with the mother. Infants who scored at the low point of the scale were characterized by flat affect, listlessness, minimal attention to or interaction with the mother or, in rare cases, predominant negative affect.

Percent agreement between two raters for presence/absence of the discrete behaviors was 86% for smiling, 93% for giving and showing, and 100% for looking and vocalizing, based on the total sample. Agreement between independent raters for the three-point rating was 86%. Coders were blind to attachment classification and viewed only the pre-separation segment of the videotape.

Twenty-four-month assessment.—Forty-five infants were videotaped with their mothers in

¹ Six of the first 36 did not participate in the 24-month free-play assessments. The additional 15 subjects seen in the free-play assessments had been seen in the strange situation at 18 months, but after classification, their videotapes were erased for reuse in other research. Therefore, they could not be included in the analyses of 18-month pre-separation behavior.

824 Child Development

a 10-min free-play session at age 24 months. The observations were made in a large (11 × 14-foot) room at the Institute of Child Development. The room was carpeted and contained a variety of toys for the child and magazines and a chair for the mother. Mothers were instructed not to initiate interaction with the child but to be responsive to bids for contact or interaction initiated by the child. The entire session was recorded on videotape from an adjoining room. Qualitative ratings of affective sharing were made from the video records by independent observers, using the same three-point scale described above. These ratings were made without knowledge of the 18-month ratings or attachment classifications. Agreement between independent raters was 80%.²

Results

Smiling was the only discrete behavior that significantly distinguished among the groups at 18 months. Eighteen of 19 securely attached infants (95%) spontaneously smiled at their mothers during the 3-min preseparation episode. Only five of 12 avoidant infants (42%) and two of five resistant infants (40%) smiled at their mothers. The resulting 3×2 chi-square was $\chi^2(2) = 12.12, p < .005$. A corrected 2×2 comparison of the secure and avoidant groups, considered separately, was also significant, $\chi^2(1) = 6.90, p < .01$.

Showing toys, giving toys, and looking at the mother proved to be multipurpose behaviors and were not consistently associated with expressions of positive affect. Nine of 19 securely attached infants (47%), 3 of 12 avoidant infants (25%), and no resistant infants showed toys to their mothers, $\chi^2(2) = 2.93, N.S.$ All infants looked at their mothers during the pre-separation episode, regardless of attachment classification.

The behavioral combinations of greatest interest were less common than the various discrete behaviors, but two of the three patterns observed were more characteristic of the securely attached group than any of the discrete behaviors alone. Nine of 19 securely attached infants (47%), 3 of 12 avoidant infants, and no resistant infants showed a toy and vocalized in combination, $\chi^2(2) = 2.93, N.S.$ Only se-

curely attached infants exhibited the smile + show (21%) or smile + show + vocalize (21%) combinations.³

Ratings of affective sharing on a three-point scale clearly distinguished the attachment groups at both 18 months and at 24 months. Eleven of 19 securely attached infants (58%) versus none of the anxiously attached infants received the highest score on the affective sharing scale at 18 months. Only one securely attached infant (5%) versus seven (42%) avoidant and two (40%) resistant infants received the lowest score. The group means for secure, avoidant, and resistant infants were 2.53, 1.42, and 1.60, respectively. A one-way ANOVA indicated that the groups differed significantly, $F(2,33) = 15.38, p < .001$, and one-tailed post hoc t tests indicated that the quality of affective sharing in the securely attached group was greater than in either the avoidant or resistant groups ($p < .001$ and $.005$, respectively).

The hypothesis that affective sharing is more characteristic of securely attached infants was also confirmed in the 24-month free-play, follow-up assessments. Fourteen of the 21 (67%) infants classified at 18 months as securely attached versus 5 of 14 (36%) avoidant and 3 of 10 (30%) resistant infants received the highest score on the affective sharing scale at 24 months. Only 2 of 21 securely attached infants (9.5%) versus 4 of 14 (29%) avoidant and 4 of 10 (40%) resistant infants received the lowest score. The group means for secure, avoidant, and ambivalent infants were 2.57, 2.07, and 1.90, respectively, $F(2,42) = 3.25, p < .05$. Again, one-tailed post hoc t tests indicated that the rated affective sharing was greater in the securely attached group than in either of the anxiously attached groups ($p < .05$ and $.01$, respectively).

Study 2

Study 1 laid the groundwork for study 2 in several ways. It provided further support for the predictive validity of infant attachment assessments, though the caregiver was again present in the outcome assessment. By establishing affective correlates of attachment assess-

² The attachment classifications, the pre-separation free play, and the 24-month free play data were scored independently by graduate students or Ph.D. psychologists. In addition to knowledge of the specific coding task to be performed, each was familiar with theories of emotional development and with ethological attachment theory.

³ Five additional instances of the smile + show + vocalize combination have been observed during pre-separation in a separate study using the strange situation procedure (in progress). Again the behavior was seen only in securely attached infants.

ments it encouraged us to measure aspects of personal as well as social competence in study 2. Finally, it provided justification for using pre-separation behavior to supplement reunion behavior, in cases in which observation of only a single separation-reunion sequence made it difficult to apply the standard Ainsworth classification criteria.

In the course of a longitudinal study of social competence in the second year of life, Wanda Bronson (1975) has collected extensive behavioral and psychometric data across a wide range of settings and behavioral domains, at quarterly intervals and in follow-up assessments at age 3½ years. Among these data are video records of 32 subjects observed at age 15 months in a separation-reunion procedure similar to the Ainsworth and Wittig strange situation, and Q-sort data from observations of the same subjects in the preschool at age 3½ years. The goal of the present study was to assess continuity in individual adaptation across the 15-month to 3½-year interval by relating individual differences in the quality of the infant-mother attachment at 15 months to two dimensions of competence assessed in the preschool at age 3½. A special advantage of the available Q-sort data was that the design of the Q-sort itself and the data collection were undertaken independently of ethological attachment theory and of the present hypothesis. The Q-sort assessments were designed to capture important characteristics of behavior in the peer group conceptualized in its own right and not as a function of an earlier relationship.

Methods and Results

Thirty-two white middle-class infants (16 males) were observed at age 15 months in a four-episode, 20-min "novel situation" in a large room. The procedure was similar to the Ainsworth and Wittig (1969) strange-situation procedure in that each subject was accompanied into an unfamiliar room by his mother; the subject was allowed to explore freely for 5–10 min; an unfamiliar adult entered the room, sat quietly, and then engaged the infant in interaction and exploration; the infant's mother left the room briefly and then returned, greeting and if necessary comforting the infant and reengaging him in exploration. The present novel-situation procedure differed from the standardized Ainsworth and Wittig procedure in the following respects: (a) the array of toys provided by Ainsworth and Wittig was replaced by a single large novel object (see Bronson & Pankey 1977), (b) the procedure entailed a *single*

mother separation lasting 1 min, rather than the two 3-min separations used by Ainsworth and Wittig.

Everett Waters and L. Alan Sroufe, who were experienced in the analysis of individual differences in security of attachment from the Ainsworth and Wittig strange situation, viewed the novel-situation video record of each subject without knowledge of any other data regarding either the infant or its mother or the Q-sort data. Each subject was classified by conference as either securely attached or anxiously attached. The major criteria for secure attachment were active exploration combined with interaction with the mother; absence of distress at the novelty of the situation per se; the absence of *angry* crying during separation; unwillingness to accept the stranger as a substitute if distressed by the separation; greeting, approach, and contact and an ability to be comforted by the mother on reunion and to return to exploration. Since there was only one separation-reunion experience in this study, the presence of clear-cut affective sharing with the mother in pre-separation and reunion episodes (see study 1) was used to supplement these observations. Affective sharing was viewed as a sign of secure attachment but absence of affective sharing was not used as an exclusion criterion in assessing the quality of the infant-mother attachment. The primary indications for insecure attachment were: (a) inability to use the mother as a secure base from which to explore, as seen in preoccupation with the mother throughout the procedure; (b) distress at the novelty of the situation per se, even in mother's presence; (c) failure to greet or interact with the mother on reunion, partial approaches followed by active avoidance on reunion, active resistance to physical contact with the mother on reunion by an infant distressed by separation, and inability to be comforted and to return to exploration after reunion (see Ainsworth et al. 1978, and Sroufe & Waters 1977, for more detailed descriptions of the scoring of strange-situation behavior and of the relationship between reunion behavior and security of attachment). Indications of anxious attachment rarely occurred in isolation. When they did, only clear-cut active avoidance or active resistance during reunion were considered sufficient in themselves to assign a subject to the insecure attachment group; that is, absence of affective sharing in pre-separation was not in and of itself sufficient.

Twenty infants were classified as securely

826 Child Development

attached on the basis of these data; 12 infants were classified as anxiously attached. The *T* tests comparing the securely attached and anxiously attached groups on the Bayley Mental Development Scale at age 14 months and on the Stanford Binet at age 36 months indicated no significant differences between the groups at either age.

The independent *Q*-sort data were based on 5 weeks of observation in a preschool classroom by two independent observers who had no prior knowledge of the children. Two observers performed *Q* sorts on each subject by placing each of 72 items in one of nine categories from most characteristic to least characteristic of a given child. The task required that equal numbers of items be placed in each category in the finished sort (see Block 1961, for a discussion of *Q*-sort methodology). The *Q* set used in the present study was a modification by W. Bronson of a preschool competence *Q* set developed by Baumrind (1968). The mean correlation between independent raters across individual items for the entire sample was .61. For the present analysis, the placement of an item by the two independent sorters was averaged and used as a subject's score on the item.

In order to assess competence in the preschool peer group, two 12-item criterion *Q* scales were assembled rationally and without reference to the attachment data from the 72 item *Q* set. The first 12-item set (peer competence) included all reliable items referring to initiative, skill, and engagement in interaction with peers. It was designed to describe the characteristics of the socially competent child as described by Vaughn and Waters (1979). The second 12-item set (ego strength/effectance) included all reliable items referring to personal and motivational assets that do not assume an interactive context. It was designed to assess a construct related to the concepts of ego resiliency and ego control discussed by Block and Block (1979). Item-total score correlations were used to assess internal consistency, and discriminant validity was improved by reassigning three items which correlated less with the set to which they were initially assigned than with the other set. The items included in the peer competence and ego strength/ef-

fectance scales are listed in table 1.⁴ Each subject's score on the two scales was computed by summing the average category placement (1-9) of each item included in each 12-item set. The maximum score for each scale is $104 = 8(9) + 4(8)$ and the minimum score is $16 = 8(1) + 4(2)$. The item scores and item-total correlations for each item on the peer competence and ego strength/effectance scales are presented in table 1. The internal consistency reliabilities of the two scales (Cronbach's alpha) were .93 and .91 for peer competence and ego strength/effectance, respectively. The correlations between the peer competence and ego strength/effectance scales and the 14- and 36-month cognitive tests were $-.07$, $-.07$, $.13$, and $.32$, respectively. The correlation between the two scales was .61.

Eleven of 12 items on the peer competence scale distinguished the attachment groups at the .05 level or better. The mean total scores on peer competence for the securely and anxiously attached groups were 72.8 and 49.6, respectively, $t(31) = 3.21$, $p < .005$. On the ego strength/effectance scale, five of 12 items distinguished the securely and anxiously attached groups at the .05 level or better. All nonsignificant group differences for both item sets favored the securely attached group. The mean total scores on ego strength/effectance for the securely and anxiously attached groups were 79.8 and 68.9, respectively, $t(31) = 1.7$, $p < .05$.

These results indicate that individual differences in quality of attachment in infancy are predictive of individual differences in both peer competence and ego strength/effectance in the peer group at age 3½. This is true both at the level of total scores and at the level of individual *Q*-set items (even without correcting group differences or individual items for attenuation). Results of this kind from analyses of existing data are encouraging as to the value of initiating further longitudinal research on this topic.

Discussion

Construct validation is an incremental process. Each successful step increases our confidence in the validity of the construct and also

⁴ In a subsequent study of 54 3-5-year-old children in preschool classes (Waters, Garber, & Vaughn, Note 3), behavioral assessments of the peer competence construct, *Q*-sort assessments of the Block ego constructs, and the present 72-item *Q* set were collected. The 12-item peer competence scale used here correlated .77 with the behavioral peer competence assessment. The 12-item ego strength/effectance scale used here correlated .81 with ego resiliency and .48 with ego control.

contributes to the development and refinement of the theory that surrounds it. We have previously shown that individual differences in secure attachment can be highly stable from 12–18 months in a middle-class sample (Waters 1978). Subsequently, we showed that 18-month attachment data predicted play and problem-solving behavior outside the strange situation at age 2 years (Matas et al. 1978). In both studies, however, the mother was present in both assessments. By establishing positive affective correlates and by predicting over a 2-year period to behavior in a context where mother was not involved, the present studies have taken additional steps toward validation of the attachment construct.

Attachment and positive affect.—Study 1 helps expand the definition of secure attachment by going beyond the usual emphasis on absence of negative signs to emphasize the importance of positive affective sharing. Exploration in the caregiver’s presence, active greeting after separation, and various kinds of distal interaction have always been central to descriptions of the secure attachment relationship. But previous laboratory research has

placed special emphasis on the infant’s ability to be comforted by the caregiver’s presence and on the absence of anger, resistance to contact, and active avoidance of interaction after brief separations. While these signs have proven their value in assessing individual differences in ability to use the caregiver as a secure base, they should not imply that secure attachment is merely the absence of negative signs. An infant’s confidence in a caregiver’s availability and responsiveness should have clear correlates in positive affective exchanges when stress is minimal. Study 1 demonstrated that securely attached infants display patterns of positive affective sharing in the strange situation and during later free play, which distinguish them from anxiously attached infants and clearly confirm this prediction.

Attachment as a construct.—Some trait models of attachment (or dependency) suggest that attachment is an entity residing within the infant. Such models also imply that attachment behavior is caused by a motivational state associated with the infant’s personality. Neither of these suggestions is consistent with the evidence that attachment behaviors are not strong-

TABLE 1
Q-SET ITEM MEANS BY ATTACHMENT CLASSIFICATION AND ITEM-TOTAL SCORE CORRELATIONS

	ITEM-TOTAL CORRELATION	ATTACHMENT CLASSIFICATION GROUP MEANS		<i>p</i> (One-tailed Test)
		Secure	Anxious	
Peer Competence Scale:				
Other children seek his company . . . . .	.73	6.2	3.8	.001
Socially withdrawn	-.89	3.9	6.2	.002
Suggests activities . . . . .	.83	6.2	3.5	.005
Hesitates to engage	-.86	3.9	6.2	.007
Peer leader . . . . .	.71	5.2	3.3	.01
Sympathetic to peers’ distress . . . . .	.43	8.4	4.2	.01
Spectator (vs. participant) in social activities	-.90	4.1	6.1	.02
Attracts attention . . . . .	.87	5.6	3.4	.02
Hesitant with other children	-.88	3.4	5.4	.03
Withdraws from excitement and commotion	-.49	2.7	4.1	.03
Typically in the role of listener (not full participant in group activities)	-.66	4.2	5.9	.05
Characteristically unoccupied	-.55	3.7	4.7	.14
Ego Strength/Effectance Scale:				
Self-directed . . . . .	.81	6.4	4.2	.01
Uncurious about the new	-.55	2.4	3.7	.01
Unaware, turned off, “spaced out”	-.78	2.8	4.2	.03
Forcefully goes after what he wants . . . . .	.67	6.6	5.1	.04
Likes to learn new cognitive skills . . . . .	.74	5.9	5.0	.05
Confident of his own ability . . . . .	.58	6.6	5.7	.15
Sets goals which stretch his abilities . . . . .	.76	6.3	5.5	.19
Becomes involved in whatever he does . . . . .	.88	7.1	6.5	.23
Does not persevere when nonsocial goals are blocked	-.74	2.7	3.1	.25
Samples activities aimlessly, lacks goals	-.81	3.2	4.8	.25
Suggestible	-.72	4.4	4.8	.36
Indirect in asking for help	-.50	3.2	3.5	.38

ly intercorrelated and are strongly influenced by situational variables. This evidence has led some to suggest that attachment behavior is primarily a function of caregiver control (e.g., Gewirtz 1972a, 1972b) or situational control (Masters & Wellman 1974). Others have proposed that there is no need for an attachment construct at all; everything implied in the term attachment is said to be captured in micro-behavioral descriptions of the contingencies within infant-caregiver interaction (e.g., Rosenthal 1973; Weinraub, Brooks, & Lewis 1977). There is no attachment, only interaction.

Data demonstrating important roles for caregiver behavior, mutual influences, and context sensitivities contradict the view that attachment is a static causal trait or entity residing within the infant. But they need not diminish our interest in other views of the attachment construct. Study 2 provides evidence of cross-age, cross-situational, cross-behavioral correlates of infant behavior that cannot be explained by reference to external control. Whatever the caregiver's contribution to the infant's behavior, and without denying the power of contextual influences, we must conclude that the infant too makes an independent contribution to its own behavior and development. Moreover, this contribution is mediated by affective and cognitive inputs which can only be comprehended by an attachment construct.

We have recently argued that attachment is an important, integrative developmental construct and that attachment and interaction are not one and the same (Sroufe & Waters 1977). At the same time we argued that attachment is not an entity, especially not a causal trait. When attachment is viewed as an organizational construct, the task is to uncover the roles that infant, caregiver, context, and interaction play in the development, organization, and maintenance of a relationship. Attempts to isolate the essence of attachment within one of these variables only make the task more difficult to accomplish.

Competence and continuity in development.—The results of study 2 expand the range of empirical relationships between infant-mother attachment and later social development. As mentioned above, clear cross-age, cross-situational, and cross-behavioral predictions can neither be derived from nor explained by situational influences. To us the importance of the study lies exactly in the fact that the results were predicted (and confirmed with lit-

tle chance to capitalize on fortuitous or unreliable correlations).

The assessments in study 2 tap two dissimilar behavioral domains. Yet from our point of view the prediction of cross-behavioral consistency was not an unlikely one. The attachment and peer group assessments were designed as age appropriate assessments of the same construct: competence, the ability to make use of individual and environmental resources to achieve a good developmental outcome (Waters & Sroufe, Note 4). We believe that our assessments tapped the child's ability to generate and coordinate flexible adaptive responses to demands and to generate and capitalize on opportunities for interaction and learning. The emphasis in study 2 was on age appropriate assessment of underlying competence, not on specific competencies or skills. Continuity was not sought in frequencies of discrete behaviors or in specific skills but in the quality of adaptation vis-à-vis the developmental issue salient at each age (Sroufe 1978). Thus it was expected that quality of attachment in infancy (rather than an index of early peer interaction skills) would predict competence and effectance in the peer group. The results of this study suggest that, despite their costs and risks, prospective studies of individual differences continue to be useful in the validation of developmental constructs and the testing of developmental models.

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