Attachment and Dependency in Developmental Perspective

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SROUFE, L. ALAN; FOX, NANCY E.; and PANCAKE, VAN R. *Attachment and Dependency in Developmental Perspective.* CHILD DEVELOPMENT, 1983, **54**, 1615–1627. In the past 15 years, a major advance in the study of early social development has been the conceptual distinction between attachment (the relationship between infant and caregiver) and dependency (the reliance of the child on adults for nurturance, attention, or assistance). Having made this distinction, it is possible to ask questions anew concerning the relationship between infant-caregiver relations and later overdependency of the child. In this study such a tie was examined by assessing children with varying attachment histories in a preschool setting. It was found that groups of children classified at 12 and 18 months as avoidant (Ainsworth Group A) and resistant (Ainsworth Group C) both were highly dependent in the preschool, based on teacher ratings, rankings and Q sorts, observed physical contact seeking, and observed guidance and discipline received from teachers. Children who had been securely attached (Group B) were significantly lower on all these measures and significantly higher on "seeking attention in positive ways." The high dependency of both anxiously attached groups, despite their differences in manifest behavior in the attachment assessments, suggests that the roots of overdependency lie in the quality of the early infant-caregiver relationship.

The concepts of dependency and attachment have received a great amount of attention from developmental psychologists. Historically, three stages in the history of these concepts may be discerned: (1) the rise to prominence of the dependency concept (e.g., Sears, Maccoby, & Levin, 1957), (2) assimilation of the ethological concept of attachment to the dominant dependency paradigm and interchangeable use of the terms (Gewirtz, 1972; Maccoby & Masters, 1970), and (3) the separation of the two concepts, with a concurrent ascendancy of attachment (Ainsworth, 1969, 1972; Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969; Maccoby, 1980; Sroufe & Waters, 1977). A new and fruitful interrelating of these concepts, now distinguished, remains to be accomplished.

Originally, dependency was a trait concept, referring to individual differences in need for comforting, approval, or attention (Beller, 1955; Hartup, 1966; Sears, Whiting, Nowlis, & Sears, 1953). It was closely related to Murray's (1938) concept of "n Succorance" (need for care). In the learning theories dominant in the 1940s and 1950s,

dependency was considered an acquired drive, learned in conjunction with the normal process of caregiving. The individual learns to associate the presence and ministrations of the caregiver with the gratification of other drives and, in that way, contact with people acquires value. Alternatively, young infants learn to seek assistance from others to meet basic needs, and later "socioemotional dependency" is an outgrowth of this "instrumental dependency" (Heathers, 1955; Sears et al., 1957). In both learning positions it was implied that the strength of this acquired drive could become excessive, that the child could become motivated to seek contact or attention from others continually for its own sake. This viewpoint prompted a great deal of research on individual differences over time (Heathers, 1955; Kagan & Moss, 1962).

Although Bowlby (1969, pp. 228–29) clearly distinguished his attachment concept from dependency, it was nonetheless initially assimilated to the dependency concept. This was no doubt because discussions of each concept emphasized early caregiver-infant contact and because most of the

same behaviors (crying, clinging, proximity seeking) underlay both constructs. "The terms dependency and attachment are both used to refer to a class of behaviors . . . that maintains contact . . . between a child and one or more other individuals and elicits reciprocal attentive and nurturant behavior from these individuals.. . . . The term dependency . . . includes the same classes of behavior Bowlby would call attachment" (Maccoby & Masters, 1970, pp. 74–75).

While Maccoby and Masters made important distinctions between attachment and dependency elsewhere in their paper, the partial linking of the concepts by them and by others in the early 1970s was influential. This linking of attachment with dependency trait theory was unfortunate. When assumptions underlying trait theory (cross-time and cross-situational generality, intercorrelated indexes, etc.) were challenged, both concepts fell into disfavor (Masters & Wellman, 1974; Weinraub, Brooks, & Lewis, 1977).

In time, however, the distinctions made by Maccoby and Masters and Bowlby's ideas became better understood (Ainsworth, 1972; Sroufe & Waters, 1977). Bowlby's concept of attachment was very different from the dependency trait notion. First, attachment referred to the *relationship* between infant and caregiver, not behaviors of the child toward people in general. The attachment relationship evolves over the first year and beyond; a child is dependent on a caregiver well before he is attached to that person. "Conversely a child . . . who is being looked after by strangers may show the clearest evidence that he is strongly attached to his mother though he is not at that time dependent on her" (Bowlby, 1969, p. 298). Second, the concept was formulated at a more abstract level, referring to the affective bond between infant and caregiver and to the flexible *organization* of behavior in the service of this bond, in distinction to the behaviors themselves. Situationally flexible deployment of behavior and changing organization over time were central in the concept. Moreover, attachment relationships were viewed as a normal part of social functioning, even in adulthood. Thus, maladaptation is not best described as being "too attached" or failing to leave attachment behind.

The validity of the attachment concept, as with any construct, hinges on the network of empirical relations built up around it and its power in yielding a coherent picture of individual adaptation (Sroufe & Waters, 1977). In the last decade substantial progress has been made in validating the attachment construct (e.g., Ainsworth et al., 1978; Sroufe, 1979), and it has overshadowed the trait concept of dependency (e.g., Maccoby, 1980).

Disentangling the concepts of attachment and dependency, especially as originally conceived, was important for several reasons. First, attachment, as distinguished from an acquired dependency need, ascended when drive theory collapsed. Research on attachment has pointed the way to a new, more viable individual differences position. Individuals may not exhibit consistent frequencies of particular behaviors over time or across situations, but the *organization* of their behavior across time and situations is coherent. This organizational perspective may be brought to bear on the concept of dependency itself; for example, children may manifest the same degree of dependency in vastly different ways—some by the desperateness of their contact in restricted circumstances, others by chronic low-level attention seeking, and so forth. Finally, having separated the concepts of attachment and dependency, it may now be timely to reexamine the relationship of dependency to attachment, including developmental links. The concept of a need or motive to seek contact, attention, or approval from others was sufficiently powerful to motivate 40 years of research. And the idea that individuals differ in their dependency needs continues to be a cornerstone of much clinical work (e.g., Bowlby, 1981; Fast, 1966; Morris, 1983). It seems unlikely that so many observers of human behavior would have erred in assigning importance to this concept. Moreover, the concept of dependency has been elaborated and divorced from an acquired-drive position (Beller, 1959).

If there are meaningful individual differences in "overdependency" or in styles of manifesting dependency, it does seem reasonable that these would have early origins. The fact that the concepts of attachment and dependency are not synonymous does not imply that they are unrelated. Individual differences in infant-caregiver attachment may have clear implications for later dependency behavior, though the developmental relationships may be more complex than previously thought.

The specific question underlying the present investigation concerns the relation

between individual differences in the quality of infant-mother attachment and later degree and/or style of dependency. In keeping with our underlying developmental perspective (Sroufe, 1979), the quality of attachment was assessed in infancy, and child overdependency was assessed in the preschool. Dependency, as defined by contact seeking, interaction with, and being nurtured by the caregiver is the norm in infancy. Thus, individual differences in *degree* of dependency in infancy may not be good candidates for predicting dependency problems in the preschool. Not amount of dependency, but the effectiveness of the infant-caregiver system in meeting the infant's emotional needs may be the more appropriate focus early in development. In contrast, it may make sense to view preschool children as differing in both degrees and styles of dependency (Maccoby, 1980). Children who require a high degree of contact, approval, or attention from adults are showing a deviation from the developmental course toward autonomy usual in our culture. To the extent that this adult contact interferes with environmental mastery and peer relations such dependency would be maladaptive. Other children may learn to express dependency in more age appropriate ways (e.g., through shared accomplishment). Understanding the developmental roots of such patterns of behavior would seem quite important.

It was hypothesized that infants who were secure in their attachments, in Ainsworth's sense, would be *less* dependent as preschoolers. In contrast to the view that one may learn to be too dependent in infancy through direct conditioning, our hypothesis (e.g., Matas, Arend, & Sroufe, 1978) is that establishing an effective attachment relationship—that is, one in which the child's emotional needs are met effectively—paves the way for normal autonomy—that is, a balance between individual mastery and effective contact with adults (also see Yarrow, 1972).

Children whose attachments in infancy were not secure will manifest later dependency problems in various ways. For some anxiously attached infants, this prediction seems obvious from a variety of perspectives. These infants (Ainsworth's anxious/resistant group) show much crying, difficulty settling, and often angry or petulant behavior in the strange-situation assessment. For other infants (Ainsworth's anxious/avoidant group) the prediction is not so obvious. These infants commonly cry only when left alone; they may settle readily with a stranger, and they tend to ignore (often by continuing to attend to toys), turn away, or otherwise avoid their mothers following a brief separation. This behavior might be interpreted as "precocious independence." However, from the developmental/organizational view espoused here, these infants are also failing to develop the base they need for autonomous functioning. Moreover, from the assumption that the need for nurturance and closeness is biologically based, these children also may seek such closeness when later opportunities arise.

In summary, the hypothesized relationship between attachment and dependency is developmentally more complex than the previous notion of traitlike stability (strong dependency in infancy leading to overdependency in the preschool). Secure attachment in infancy (effective dependency) provides the conditions for emerging self-confidence and autonomous functioning. Anxious attachments, even if taking the form of a failure to seek contact or emotional support in time of need, fail to provide the foundation for adequate self-development and leave the child unduly reliant on adult resources and with strong needs for nurturance. As Yarrow (1972, p. 92) put it, "The child who has developed confident expectations toward his mother and who sees his environment as essentially predictable may be capable of greater instrumental independence than the child who does not have these confident expectations."

Method

Subjects

Subjects were 40 children who attended two consecutive classes at the University of Minnesota nursery school; 15 children (nine boys and six girls) attended a 10-week class, 25 children (13 boys and 12 girls) attended a 20-week class. In the latter class, two boys attended only 10 weeks, one replacing the other who moved. Subjects were selected for the preschool from the large longitudinal study of Egeland and Sroufe (e.g., Vaughn, Egeland, Waters, & Sroufe, 1979), largely on the basis of stable attachment at 12 and 18 months. To balance sex, race, age, and IQ, some children whose attachment changed were also included. Of the 40 children, 34 had shown stable attachment patterns (see Ainsworth et al., 1978) in infancy; 16 were classified as securely attached in the Ainsworth strange situation (Group B) at

both 12 and 18 months, 10 were classified as anxious-avoidant (Group A) at both ages, and eight were classified anxious resistant (Group C).[1] Two others were anxious-resistant at one age and anxious-avoidant at the other. The remaining four infants (all in the smaller first class) were "mixed," showing an anxious pattern of attachment at one age and a secure attachment at the other assessment. Two separate pairs of coders, trained to criterion by Ainsworth or people trained by her, independently coded the 12- and 18-month tapes. Agreement on major classification was 89%, and disagreements were resolved by conference.

The age range of the children was 47–60 months (mean of 52 months) at the start of the class session. Age was balanced with respect to attachment history. Sex and race were also balanced, with a total of 15 non-white children. All were drawn from a large urban poor sample.

While attachment patterns are commonly stable in middle-class samples (Waters, 1978), there was substantial instability within our urban poor sample (Vaughn et al., 1979). This subsample, therefore, is not a random sample from this population, but it is representative of the range of adaptation—that is, from those children who showed a consistently poor-quality adaptation in the second year to those children who showed good-quality adaptation.

Classroom Setting

The setting for the preschool was one of the nursery school classrooms in the Institute of Child Development. The classroom was well-equipped with a variety of materials for young children. At the far end of the room was an area designed primarily for sociodramatic play and large motor activity. It included a "housekeeping" area, clothes, hats, wigs, and shoes for dressing up, a loft for climbing and additional play, and large blocks for building. The middle of the room contained a round table surrounded by shelves of puzzles and various manipulatives from which children could choose. There was also a reading area with a wide selection of children's books and a couch where children could read or be read to. The third section of the room, at the front end, was organized primarily for creative activities. There was usually a sand table or water table with small toys, as well as a science area with various objects, plants, and magnifying glasses for play and exploration. There were both a small playground and a large playground area outside of the institute, as well as a room of gym equipment across the hall from the classroom. Finally, there was a large enclosed observation booth above and to the side of the classroom, where observers could watch unobtrusively.

Teachers.—Two certified, experienced nursery school teachers were chiefly responsible for the preschool and were in the classroom each day of the school week. During the first session, with the smaller sample of children, two additional co-teachers were present, one every day, and one 2 days a week. During the second session, this same staff was present; however, the first co-teacher now acted as a main teacher. Two additional co-teachers joined, one for 3 days and the other for 1 day a week. Finally, a student teacher from the nursery school certification program of the institute spent 3 days a week in the classroom for a 10-week period. Thus, during the first session, there was a staff of four teachers, with no less than three teachers present on each day. During the second session, there was a total staff of seven teachers, with no less than four teachers present on each day. Each of the co-teachers was a student with previous experience working with preschool children and was supervised by the main teachers.

Routine.—The routine for both classes was similar. The children who arrived first had outdoor (or indoor) large motor play and small group table activity. When the second group arrived, there was 50 min of free play with first and second groups together. After snack (and in the first class large-circle time), the first group of children departed, and the second group had small groups and finally outdoor play. For the first class there was a single large-circle time (songs, games, sharing). For the second class, early and late groups had large-circle time separately (before small-group time).

Procedures for Assessing Dependency

Two basic types of assessment procedures were employed: (1) a series of rankings, ratings, and descriptions made by the

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[1] Secure infants are readily comforted following separation or actively greet the caregiver upon reunion, and they are able to use the caregiver as a base for exploration. Avoidant infants ignore or avoid the caregiver following a brief separation. Resistant infants mix contact seeking with angry behavior or fail to become settled. Their exploration typically is poor. See Sroufe & Waters (1977) and Ainsworth et al. (1978) for more complete descriptions.

preschool teachers at the end of the term and (2) behavioral observations in free-play and group settings made throughout the term.

Teacher data.—All three principal teachers, who were blind to attachment history, first rank ordered the children on dependency at the end of each class, guided by a single-paragraph description of the various ways dependency might be manifest (nurturance or attention seeking, extreme reliance on the teacher for help or guidance, involvement with the teachers at the expense of peers). In addition, they carried out a Q sort of each child, using the 100-item California preschool Q sort deck (Block & Block, 1979). A scaled score on dependency was derived for each child by combining 12 dependency-relevant items. Examples of positively weighted items were "looks to adults for help and direction" and "seeks physical contact with others." Examples of negatively weighted items were "is self-reliant, confident" and "is resourceful in initiating activities."

Two teachers also rated the children on a seven-point dependency scale developed for this project and on Beller's (1955) dependency scales. The latter was revised to include subscales for seeking help in self-management and social management, seeking contact, proximity or recognition from teachers, negative attention seeking, passive attention seeking, and positive attention seeking. Teachers were instructed in the use of the scales but received no further training.

Behavioral data.—A team of observers, all blind to attachment history, coded classroom interactions with teachers using a "teacher sampling" procedure (focusing on one teacher for 3 min, then the next teacher in turn). Both child-initiated and teacher-initiated behaviors were coded. Child-initiated behaviors included seeking nurturance, seeking attention, help seeking–physical, help seeking–cognitive, and help seeking–social. Teacher-initiated behaviors included giving support, giving guidance, and discipline. See Table 1 for definitions.

A different team of observers coded behavior in "circle" (large-group song and story time), using a very simple scheme. They recorded whether a child was sitting next to a teacher, whether the child achieved contact with a teacher (leaning against, hand on knee, etc.), and whether the child was on a teacher's lap. These data were quantified by giving a child 1 point for proximity, 2 for contact, and 3 for being on lap and summing the score across days (with correction for attendance).

Reliabilities and concordances among measures.—Rank ordering of the three teachers showed good agreement (average = .77 for winter, .52 for fall), as did their agreement on the dependency measure derived from the Q sort (.70). They showed less agreement on the overall Beller scale score and the global dependency rating (.39 and .40, respectively). Nonetheless, the advantage of creating a composite across teachers (within measures) is that one can assume the composite is more reliable than the individual ratings and ranking. The agreement of the Q sort and the rating measures with the composite ranking ranged from .73 to .89, revealing strong coherence within the teacher assessments.

Reliability data were not obtained for the highly objective seating chart data. For

TABLE 1

DEFINITIONS OF TEACHER-CHILD
CONTACT VARIABLES

Child-initiated contact:

   Support seek–nurturance (SSN): A request for emotional comforting or nurturance that involves physical contact such as hugging, kissing, sitting in the lap, cuddling up to, or holding hands with the teacher.

   Support seek–attention (SSA): A request for attention without physical comforting or a specific request for help—e.g., "Look at me!"

   Help seek–physical (HSP): A request for assistance pertaining to health/hygiene, dress, or use of, location of, or aid in obtaining toys and supplies.

   Help seek–cognitive (HSC): A request for assistance with question regarding time, permission to go somewhere, or general questions about activities, objects, or the world.

   Help seek–social (HSS): A request for assistance in situations involving another person, child or adult, pertaining to possession of objects, sharing, and turn taking, whereabouts of, welfare of, or personal information about others. Any request for help specific to a social interaction.

Teacher-initiated contact:

   Support give (SG): Providing support and nurturance such as reinforcement, comforting, or encouragement.

   Guidance (G); A verbal directive with a neutral or positive tone pertaining to giving explanations, prohibitions, instructions, or information.

   Discipline (D): Forceful, stern directives or prohibitions.

the free-behavior codings agreement between coders ranged from .65 to .75 during simultaneous 10-sec observations (presence or absence of the behavior). Across the entire observation period data from each pair of coders produced correlated rank orderings on the summary child-teacher contact variable (range, .62–.76; mean, .69).

Further data on agreement among measures will be presented in the results.

Results

The data from session 1 and session 2 were treated separately, then combined for analysis of the total sample. T tests were used to compare secure vs. anxious groups in session 1, since there were not sufficient cases for separate analysis of the two anxious groups (A and C). One-way analyses of variance were used to examine between-group differences for session 2 and for the combined sample. In the analyses of variance, a priori contrasts were used to test for differences between anxious and secure (A and C vs. B) and between the two anxious groups (A vs. C). In combining the samples from the two sessions, three of the children in the first group who were classified as "mixed" were placed in the C group, as this classification was confirmed by our 24-month assessment (Gove, 1982). The fourth child from the "mixed" group was not included in the combined analysis, since a decision could not be reached regarding his final classification status.

Teacher Data

Rankings.—It was expected that the anxiously attached children would be ranked higher on dependency than the securely attached children. The average rank across the three teachers was computed for each child. Significant differences in the expected direction were found between groups for session 1, $t = -3.61, p < .005$, and session 2, $F = 4.21, p < .05$. A priori contrasts of groups A and C against B were significant for session 2, $p < .01$.

Inspection of the composite rank ordering of the children shows how dramatic these results are. In the first session, seven of the eight children ranked highest on dependency were in the anxiously attached group. In the second session, 12 of the 13 highest-ranked children were in either group A or group C, $p < .001$. The exact ranks for this class were as follows: C, C, A, A, C, A, C, A, A, B, C, A, C, B, B, C, B, B, A, A, C, B, B, B.

Global rating.—Average ratings were computed for each child, across two teachers for session 1 and three teachers for session 2 (see Table 2). Anxiously attached children were rated as more dependent than the securely attached children in session 1, $t = 1.79, p < .005$, session 2, $F = 3.874, p < .05$, and in the total sample, $F = 7.859, p < .002$. A priori contrasts of groups A and C against group B were significant for session 2, $p < .05$, and the total sample, $p < .001$.

Revised Beller Dependency Scale ratings.—The overall revised Beller De-

TABLE 2

MEANS AND TEST STATISTICS FOR MAIN TEACHER VARIABLES

	SESSION 1		SESSION 2			TOTAL SAMPLE		
	Anxious	Secure	A	B	C	A	B	C
Rank:								
Mean	9.28	4.39	14.06	7.42	14.31			
F or t	3.61**		4.21*					
Rating:								
Mean	4.50	3.00	4.25	2.85	4.29	4.41	2.92	4.36
F or t	2.79**		3.87*			7.86***		
Revised Beller Scale:								
Mean	4.07	3.58	4.31	3.74	4.19	4.37	3.67	4.10
F or t	1.35		1.44			3.55*		
Q sort scale:								
Mean	6.79	−5.95	4.50	−7.15	2.38	7.18	−6.62	2.14
F or t	3.22**		2.62			6.89**		

* $p < .05$.
** $p < .01$.
*** $p < .001$.

pendency Scale rating (simply averaging across the eight subscales) yielded a significant difference for the total sample, F = 3.553, p < .05, and for the a priori contrast for A-C against B, p < .02. But this result obscures the profound differences among groups (see Table 3), because on one subscale ("seeking attention in positive ways") the direction of differences was, as predicted, reversed. Securely attached children showed significantly *more* positive attention seeking in session 1, t = −2.87, p < .02, session 2, F = 6.705, p < .01, and in the total sample, F = 8.86, p < .001. The a priori contrast (A-C vs. B) was significant beyond the .0001 level for the total sample. Differences for all other subscales were, as predicted, in the other direction, with three being significant: seeking help in self-management— total sample contrast, p < .001, seeking help in social management, p < .05, and

seeking attention in *negative* ways, p < .05. Thus, all groups sought teacher attention, but the anxiously attached children did so in negative ways. And the anxiously attached children sought significantly more help in self and social management. The total Beller score with positive attention removed was, of course, significant, F = 6.173, p < .005, for the total sample.

Q sort dependency scale.—Ratings on the six positively weighted items and six negatively weighted items were totaled for each child and averaged across three teachers (see Table 2). It was expected that the total scores of anxiously attached children would be significantly higher than those of securely attached children. Significant differences were found between groups for session 1, t = 3.217, p < .01, and the total sample, F = 6.886, p < .005. The

TABLE 3

MEANS AND TEST STATISTICS FOR INDIVIDUAL REVISED BELLER DEPENDENCY SCALE ITEMS

	SESSION 1		SESSION 2			TOTAL SAMPLE		
	Anxious	Secure	A	B	C	A	B	C
Help seeking in self-management:								
Mean	4.50	2.82	4.59	3.17	4.50	4.70	3.02	3.93
F or t	3.35**		3.80*			9.53***		
Help seeking (interpersonal):								
Mean	4.19	3.11	4.34	3.44	4.09	4.41	3.30	4.00
F or t	1.95		1.59			3.84*		
Recogniion seeking:								
Mean	3.87	4.29	4.50	4.19	4.12	4.30	4.23	4.10
F or t	−.99		.37			.14		
Contact seeking:								
Mean	4.09	3.50	4.44	3.56	4.19	4.59	3.53	4.08
F or t	.83		.89			2.10		
Seeking to be near:								
Mean	4.06	3.57	4.34	3.92	4.72	4.50	3.77	4.40
F or t	.79		.65			1.24		
Positive attention seeking:								
Mean	3.22	4.82	3.69	5.17	4.28	3.48	5.02	3.98
F or t	−2.87**		6.70***			8.86***		
Negative attention seeking:								
Mean	4.31	3.46	4.81	2.83	3.81	5.02	3.11	3.87
F or t	.77		2.50			3.50*		
Passive attention seeking:								
Mean	4.31	3.04	3.75	3.61	3.78	3.98	3.36	3.96
F or t	1.73		.64			.82		

* p < .05.
** p < .01.
*** p < .001.

difference for session 2 approached significance, $F = 2.618$, $p < .10$. A priori contrasts of groups A and C against group B were significant for session 2, $p < .05$, and the total sample, $p < .001$. Individual items discriminating the groups beyond the .05 level, all in the expected direction, included the following: "looks to adults for help and direction," "tends to be sulky or whiney" (positively weighted items), "is curious and exploring, eager for new experience," "can recoup or recover under stressful experiences," "seeks to be independent and autonomous," "is self-reliant and confident," and "is resourceful in initiating activities" (all negatively weighted).

On none of the teacher-based measures was the contrast between groups A and C significant. Nor did any particular items on the Revised Beller Dependency Scales or Q sort dependency scale differentiate between the two. Group A children were just as high on the dependency measures as C children. In fact, inspection of the means showed that in many instances, the mean for group A's was higher than for C's.

Behavioral Observations

Objective measures included the seating chart data in the structured large groups and the free-flowing behavioral observations. It was expected that, compared with securely attached children, anxiously attached children would seek teacher contact more frequently in the large-group circle and would tend to show higher frequencies on each of the teacher contact variables measured throughout the preschool day, as well as require more guidance, support, and discipline from the teachers.

Seating chart data.—Three types of scores were obtained from the data collected during large-group circles in session 2 (see Table 4). One score indicated the proportion of times a child sat on a teacher's lap. A second score indicated the proportion of times a child did *not* sit by a teacher. The third measure was a weighted score in which 3 points were given for lap-sitting, 2 points for making contact, 1 point for sitting next to, and -1 point for *not* sitting by a teacher. This score was divided by the total number of large groups for which the child was present to correct for attendance.

Each of the three indices of contact-seeking yielded significant results. For example, means for groups A, B, and C for the weighted index were .71, .24, and .86, respectively, $t(A-C$ vs. $B) = 2.78$, $p < .01$.

The correlation between this weighted dependency index and the dependency rank order by the teachers was highly significant, $r = .62$, $p < .001$, corroborating the teacher judgments.

Classroom observations.—For each session, total frequency was tallied for each of eight behavioral variables: support–seek nurturance (SSN), support–seek attention (SSA), help–seek cognitive (HSC), help–seek physical (HSP), help–seek social (HSS), support give (SG), guidance (G), and discipline (D). Three summed variables were also used in the analysis: child-initiated contact (CIC), consisting of SSN + SSA + HSC + HSP + HSS; teacher-initiated contact (TIC), consisting of SG + G + D and other contact and teacher-child contact (TCC), which was simply the sum of all variables for each session (see Table 5). All of the frequencies were corrected for the number of observation days the child was absent.

The teacher-initiated contact variables yielded significant differences between the anxious and secure groups as predicted. The data from both classes was combined by use of Z scores to eliminate the problem of unequal number of days observed. The contrast between A-C and B was significant for both the guidance and the discipline variables, with anxious children receiving more of each. The contrast for overall teacher-initiated contact was highly significant, $p < .01$. (Both observed teacher-initiated contact and total contact with teachers were in accord with teacher dependency ranking, $r = .39$ and .47, $p < .01$ and .001, respectively.)

TABLE 4

MEANS AND TEST STATISTICS FOR SEATING CHART DATA, SESSION 2

Variable and Group	Mean	t
"On lap":		
Anxious—A ($N = 8$)	.17	2.25*
Anxious—C ($N = 7$)	.17	
Secure—B ($N = 8$)	.08	
"Not by":		
Anxious—A ($N = 8$)	.35	2.13*
Anxious—C ($N = 7$)	.30	
Secure—B ($N = 8$)	.49	
Weighted score:		
Anxious—A ($N = 8$)	.71	2.78**
Anxious—C ($N = 7$)	.86	
Secure—B ($N = 8$)	.24	

* $p < .025$.
** $p < .01$.

In contrast, none of the child-initiated contact variables significantly discriminated groups, though for three of the variables the correlation with teacher ranking was significant and the correlation of total child-initiated contact with teacher ranking, though modest, was highly significant, $r = .33$, $p < .01$. In summary, differences in dependency in these observations were revealed primarily through what the children elicited from the teachers rather than consistency in what observers could see in their behavior.

Observations of group A versus group C.—As with the teacher data, no significant differences were found between groups A and C in the initial analysis of teacher- or child-initiated behavior. But we would hypothesize that these children would differ more in the organization of their dependency behavior than in the frequencies of particular behaviors (see Sroufe, 1983; Sroufe & Waters, 1977).

We first tested the hypothesis that group A children might be more indirect in their expression of dependency. In particular, we thought that they might be low on child-initiated contact (using more subtle or indirect signs) but relatively high on teacher-initiated contact. Group C would be high on both, and group B would be moderate on child-initiated contact but low on teacher-initiated (teachers recognizing them as less "needy"). A clear trend in these directions was seen in the group curves;

TABLE 5

MEANS AND TEST STATISTICS FOR CLASSROOM OBSERVATION VARIABLES

	SESSION 1		SESSION 2			TOTAL SAMPLE (Z SCORES)		
	Anxious	Secure	A	B	C	A	B	C
SSN:								
Mean	10.44	9.77	30.06	18.37	27.80	.13	−.18	.19
F or t	.12		.15			.59		
SSA:								
Mean	79.09	86.14	70.09	69.64	77.38	−.24	.01	.19
F or t	−.45		.15			.51		
HSC:								
Mean	16.02	11.06	9.02	12.04	11.31	−.18	−.04	.28
F or t	1.10		.34			.66		
HSP:								
Mean	59.82	34.19	26.41	31.06	29.46	−.03	−.09	.15
F or t	1.76		.42			.20		
HSS:								
Mean	2.69	5.66	5.88	7.48	3.62	.10	.05	−.08
F or t	−1.46		.63			.10		
SG:								
Mean	71.36	54.03	62.66	63.11	74.68	.00	−.28	.44
F or t	1.72		.60			1.91		
G:								
Mean	94.31	65.04	60.72	42.38	60.21	.37	−.42	.27
F or t	1.51		1.44			2.92*		
D:								
Mean	11.01	5.07	2.25	.87	2.50	.33	−.34	.23
F or t	1.37		.724			1.96		
Total child-initiated:								
Mean	168.06	146.81	141.18	134.73	150.02	−.22	−.25	.73
F or t	.62		.123			.27		
Total teacher-initiated:								
Mean	192.30	134.30	130.55	111.71	146.35	.70	−1.04	.93
F or t	1.62		1.33			3.09*		
Total teacher-child:								
Mean	360.36	281.11	271.72	246.44	296.38	.48	−1.29	1.66
F or t	1.49		.81			1.54		

* $p < .10$.

nonetheless, the profile analysis based on this data did not yield significant results.

This failure could have resulted from a change in expressed behavior over time; that is, it might be predicted that the A's (Ainsworth's avoidant group) would be indirect only during initial weeks in the preschool, becoming more direct as they felt more safe. When child-initiated behavioral scores for three key variables (nurturance seeking, attention seeking, and physical help seeking) in month 1 of the second class were compared with month 5, all were in the expected direction though none were significant (for help-seek physical the p value was .09).

A final analysis was done to test the hypothesis that there may be differences between groups within different types of activities. Data from session 2 was divided into eight categories of activities: large-group, small-group, free-play, snack, cleanup, outdoor play, spontaneous-group, and program. Spontaneous group generally referred to an unplanned small group that formed naturally during the free-play period, while program was a miscellaneous category most often used in transition times. Analyses of variance with a priori contrasts were used to compare groups on each of the teacher-child contact variables within activities.

During large-group time, an activity requiring cooperation between the teachers and the children and among children, a difference was found between groups on social help seeking, $F = 4.207$, $p < .05$. The contrast between groups A and C was significant, $p < .02$, with A's higher than C's. The contrast between groups A and C and group B was significant for total teacher-initiated contact, $p < .05$, in the expected direction. During outdoor play, another activity involving cooperation among peers, a difference was again found in social help seeking, $F = 3.414$, $p < .06$, with A's again higher than C's, $p < .06$.

In spontaneous group, when typically a few children join in an unplanned activity with a teacher present, some interesting differences were found regarding C children. On support give–solicit, in which a teacher encourages the involvement of a child, the analysis of variance approached significance, $F = 3.178$, $p < .07$, and the A-C contrast was significant, $p < .05$. Group C's were higher than A's. A significant difference was also found on total teacher-initiated contact, $F = 4.524$, $p < .05$, with C's

again higher than A's, $p < .02$. On total teacher-child contact, the overall difference between groups approached significance, $F = 3.312$, $p < .10$, and once more the C group was higher than the A group, $p < .05$.

Discussion

The data are quite clear with respect to the major theoretical issue underlying this paper. Children who were securely attached as infants showed less emotional dependence (see Heathers, 1955) on their preschool teachers. This was most strongly confirmed by the teacher rankings, ratings, and descriptions, which were based on the cumulative experiences of three independent teachers, all blind to the attachment history. The teacher data were sufficiently corroborated by objective behavioral observation to rule out any problem of a general halo effect. Their judgments apparently were based at least in large part on directly and indirectly expressed dependency behavior.

These findings are consistent with the developmental/organizational perspective (Ainsworth, 1972; Bowlby, 1969; Matas et al., 1978; Sroufe, 1979; Sroufe & Waters, 1977; Yarrow, 1972), which has as a corollary that a secure attachment relationship in infancy (in which the infant experiences responsive care) provides a foundation for later autonomous functioning. Infants who are able to be effectively dependent later will not be overly dependent children.

Review of the behavior of these children in the strange situation is instructive. In that context they were active in seeking and maintaining contact (clinging, leaning in) when distressed. Moreover, this behavior was effective in terminating their distress. They also showed an obvious involvement with their mothers through greeting, interaction, and sharing of their play. The outcome data presented above make it clear that such infants do not learn a generalized tendency to seek contact or attention from adults. Rather, we believe they learn to be confident and resourceful in engaging the environment.

It should not be implied that secure children are disinterested or uninvolved with their preschool teachers. All 4-year-olds are, of course, dependent. Children who had been secure as infants readily sought instrumental assistance when their own resources were insufficient. No differences were obtained on cognitive help seeking or

general child-initiated contact measures, and they showed more "positive attention" seeking as assessed by the teachers. They did seek contact when injured, ill, or distressed. Moreover, they actively greeted the teachers on arrival and had frequent positive exchanges with them. They liked and were well liked by the teachers (reported in Sroufe, 1983).

Despite their substantial amount of initiated contact, teachers did not view "secure" children as highly emotionally dependent. One reason for this is that their contact was smooth, situationally appropriate, and effective. When they needed nurturance they sought it directly and found the contact reassuring. Quickly, they were back at play. Moreover, their close relationship with the teachers did not interfere with peer play (as seen, for example, in their relatively low teacher contact during circle time). In fact, their relationships with the teachers likely supported their peer relations. They were actively involved in the peer group, were ranked higher by the teachers on social competence, and were more popular with peers (see Sroufe, 1983).

Both groups of children that had been anxiously attached as infants, despite their phenotypically *dis*similar behavior in the strange situation, were overly dependent on their preschool teachers. The high dependence of children who were resistant seems reasonable from any theoretical perspective. As infants in the strange situation, they were strikingly passive or preoccupied with the mother, with much crying and contact seeking, sometimes even before separation. Following separation, they were difficult to settle. However, the equally high dependence of the children who were avoidant as infants, while congruent with the developmental organizational perspective, may at first seem paradoxical. In fact, their tendency to ignore, turn away from, or move away from their mothers upon reunion in the strange situation might be interpreted as meaning that they simply do not need or want contact or interaction with their mothers following the brief laboratory separations. But, in the theorizing of Ainsworth and her colleagues (e.g., Main, 1977), this avoidant behavior represents a conflict between tendencies to approach the mother and anger toward the mother. In more common language, these infants have so frequently experienced the caregiver's unavailability in times of emotional arousal that they no longer seek contact in that context. But the need for contact (emotional dependency) is biologically built in (Bowlby, 1969). It is not readily extinguished. When a later opportunity arises for contact with a nurturant adult, available over a period of time, these children show their underlying dependency needs. The data from this study are clearly in agreement with this interpretation.

It is, of course, not being argued that anxious attachment *causes* later overdependency; that is, were the caregiving environment substantially changed we would expect greatly reduced continuity in adaptation (see Vaughn et al., 1979). It is likely that caregivers that promoted formation of secure attachment continue to support the child in the preschool (Sroufe, 1979). Quality of attachment in infancy does, however, *predict* later dependency behavior (as nothing else has yet been shown to do), and it seems reasonable to assume that behavioral organization builds on earlier foundations in a coherent manner.

It should be pointed out that our results were forecast by the data from Ainsworth's original studies. In her home observations (e.g., Ainsworth et al., 1978), it was quite clear that avoidant infants did not have a generalized tendency to stay away from the mother. In fact, they stayed in proximity and cried more than did securely attached infants in the home. It was in the context of the stressful laboratory assessment, following a brief separation, that they avoided their mothers.

The problem of understanding the organization of dependency behavior in the two groups with different patterns of earlier anxious attachment remains as a challenge. The ratings and rankings of the teachers are probably too global for such a differentiation. And our behavioral observations probably were not sufficiently precise. The "same" behavior can mean many things, and individuals from the same group can express their particular dependency issue in so many different ways. We did find the cross-time trends and the significant differences across contexts to be encouraging and to be useful leads for future research.

Avoidant and resistant children exhibit vastly different patterns of adaptation in the strange situation and therefore we expect that different styles of behavioral organization ultimately will be found in the preschool as well. This already seemed clear from teachers' written descriptions. The

anxious/resistant children in group 2 were more often described as exhibiting chronic low-level contact seeking and attention seeking. They were commonly nearby teachers during free play (not coded). They waited (again, not coded) for teachers for help and guidance, commonly without seeking to carry out the activity on their own, projecting an attitude of helplessness. An occasional, impulsive/resistant child acted out with an obvious goal of seeking contact.

Avoidant children were generally much more indirect in their contact seeking and were strongly initiating only when stress was low (as in large-group time). One child, for example, routinely approached a favorite teacher through a series of oblique angles, much as one tacks a sailboat. Ultimately, he would arrive near her and back to within a few feet. Then he would wait for initiation. (Main [1977] has described this pattern in detail.) These children commonly avoided the teachers when greeted and also when the teachers sought to intervene with them. Withdrawal into a secluded spot was a frequent reaction to injury or disappointment. This pattern of a decreasing likelihood of contact seeking when emotional arousal increased (the reverse of that shown by the secure or the resistant groups) is reminiscent of the behavioral organization of the avoidant infant (Ainsworth et al., 1978; Sroufe & Waters, 1977).

Conclusion

In this study we have shown that the concept of overdependency in the preschool years remains a viable and important developmental construct. Its importance is enhanced by the fact that individual differences in such dependency may, indeed, be strongly predicted from assessments in infancy. Once again, however, the importance of a developmental perspective is underscored. Ratings of dependency in the preschool years have not been well predicted by ratings of dependency in infancy (Kagan & Moss, 1962). Nonetheless, emotional dependency is strongly predicted by the quality of the infant-caregiver attachment relationship, independent of the specific behaviors through which this quality was manifest.

It is also important to underscore, once again, the developmental basis of our definition of overdependency. In this study, children were defined as "overly dependent" or "emotionally dependent" when

their need for contact, approval, and attention from adults interfered with other developmental tasks, such as peer relations and environmental mastery. Flexible emotional involvement with teachers, warm encounters, using teachers as emotional resources, or even instrumental assistance seeking (unless chronic and undifferentiated) would not lead to a child being defined as overly dependent.

One of the most important developmental questions remaining concerns the manifestation of dependency at later ages. A very plausible hypothesis is that as time passes, and without intervention, "avoidant" children will cease to reveal their dependency in such clear ways, perhaps no longer being viewed by teachers as dependent. As capacities for emotional control develop, the dependency needs may go "underground," primarily to be manifest in a fear of interpersonal closeness. Such complexity is consistent with our developmental perspective. Dependency needs of the "resistant" children, on the other hand, may continue to be obvious, though for some of them this might increasingly take the form of hyperactivity and attention seeking through behavior problems.

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