Perceptions of Emotional Support from Mother and Friend in Middle Childhood: Links with Social-Emotional Adaptation and Preschool Attachment Security

Cathryn L. Booth, Kenneth H. Rubin, and Linda Rose-Krasnor

Children's (N = 58) perceptions of emotional support from mother and best friend were assessed at age 8. Perceptions of support from mother were predicted by attachment security at age 4, suggesting continuity in the children's internal working model of self in relation to mother. Preschool attachment security predicted age 8 perceptions of maternal support better than the mother's actual behavior at age 8. Identification of the best friend as a member of one's emotional support network was not related to security, but was positively related to social competence. However, among insecurely attached children, the greater the reliance on the best friend for emotional support, the greater the externalizing problems. Compensatory effects of best friend support on the social-emotional adaptation of insecurely attached children were not found.

INTRODUCTION

According to attachment theorists, children develop secure or insecure attachments to their mothers based on the quality of maternal care, with securely attached children experiencing care that is sensitive and responsive to their emotional needs, and insecurely attached children experiencing care that is insensitive, inconsistently responsive, or rejecting (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969/1982). Behavioral indicators of the quality of the child's attachment relationship with mother, as assessed, for example, in the Strange Situation, are said to reflect a cognitive representation or internal working model of the self in relation to mother (Bowlby, 1973; Bretherton, 1985; Main, Kaplan, & Cassidy, 1985). It is this internal working model, in part, that guides the child in the formation and development of relationships with others.

As the child matures, internal working models are presumed to be continually validated by the caregiving environment and, therefore, to become ingrained and increasingly stable. Additionally, the model may become self-reinforcing. As the child's expression of behavior is guided by the model, it would be expected to lead to interactions within relationships that would serve to strengthen the internal working model and increase the likelihood that these behaviors would continue (see Belsky & Cassidy, 1994). For example, the cognitive representation of the self as unworthy and ineffective and concomitant feelings of insecurity might be expressed in the form of dependent, immature behaviors with others (Bowlby, 1973). These behaviors, in turn, would be expected to lead to avoidance or rejection by others, thus reinforcing the internal working model (Rubin & Lollis, 1988).

In fact, continuity and stability in attachment security and internal working models have been demonstrated from infancy through early childhood (see Bretherton, 1985; Oppenheim & Waters, 1995). Other researchers' studies have focused on the adolescent and adult periods (Armsden & Greenberg, 1987; Collins & Read, 1990; George, Kaplan, & Main, 1984; Hazen & Shaver, 1987), including demonstrations of congruence between mothers' working models of relationships and their infants' behavioral expressions of attachment security (see van IJzendoorn, 1995). However, there is a paucity of research concerning attachment security in middle childhood. This is due, in large part, to the absence of adequate assessment strategies that are appropriate for this age period.

Unlike adolescents or adults, children functioning at the concrete-operational level are not capable of generating abstract reflections about the nature of their relationship with their mothers, or the consequences of the particular nature of this relationship. At the same time, the typical laboratory separation-reunion procedure used with younger children would not be expected, in middle childhood, to elicit behaviors reflecting the child's underlying cognitive representation of the primary attachment relationship.

In this study, we assessed the children's internal working models of their relationships by assessing their perceived emotional support from mother and others in their social network (see also Finnegan,
Figure 1 Model relating early attachment security to perceptions of support and adjustment outcomes. Sense of acceptance in the model is similar to the internal working model of the self as loved and valued. Adapted from Sarason et al. (1990, p. 120). Adapted with permission.

Hodges, & Perry, 1996; Grossmann & Grossmann, 1991). We reasoned that children who were securely attached to their mothers at age 4 would have a history of experiencing their mothers as responsive and emotionally available (see Emde, 1980) and of viewing themselves as worthy of love and support. Therefore, these children would be more likely than insecurely attached children to view their mothers as primary effective sources of support in middle childhood. As Bowlby (1973, p. 203) indicated, “On the structure of these complementary models [of self and attachment figures] are based that person’s forecasts of how accessible and responsive his attachment figures are likely to be should he turn to them for support. And, . . . it is on the structure of those models that depends, also, whether he feels confident that his attachment figures are in general readily available or whether he is more or less afraid that they will not be available.”

The proposed connection between attachment and emotional support in middle childhood is related to a theoretical model linking early attachment security to adult perceptions of available support, and adjustment outcomes (Sarason, Pierce, & Sarason, 1990). An adapted version of this model is shown in Figure 1. According to Sarason et al., “social support” comprises four components: (1) a sense of acceptance, which is a stable personality characteristic derived from the primary attachment relationships, and which is similar to the internal working model of the self as loved and valued; (2) perceived available support, which stems, in part, from the sense of acceptance; (3) support actually received from others; and (4) perceptions of support received, including satisfaction with this support. It is the perception of available support, rather than actual support received, that is most directly linked with attachment security and is most predictive of positive adjustment outcomes (see Komproe, Rijken, Ros, Winnubst, & ’t Hart, 1997; Sarason et al., 1990).

In the present study, we assessed a number of aspects of the adapted model and tested hypotheses derived from it. Early Attachment Security was evaluated at age 4, and Perceived Available Support, Perceptions of Received Support, the Quality of Primary Relationships (with mother), and Adjustment Outcomes were assessed at age 8.

Perceptions of available emotional support at age 8 from mother and others were evaluated via an interview assessment (My Family and Friends; Reid, Landesman, Treder, & Jaccard, 1989) in which the child was asked to rank order each member of his or
her support network in terms of their availability/desirability for giving support. Each member of the network was also rated in terms of satisfaction with support received (i.e., Perceptions of Received Support in the model). It was hypothesized that age 4 attachment security would be positively related to both aspects of support. That is, given the presumed positive nature of the mother-child relationship among securely attached children, and given the primacy of this relationship, it was hypothesized that the mothers of these secure children would receive a better ranking than most, or all other network members, and would also receive a relatively high rating for satisfaction with support received.

The quality of the mother’s relationship with her child at age 8 was assessed via ratings of maternal sensitivity and responsivity in mother-child interaction (i.e., “warmth”). Consistent with attachment theory and research (see de Wolff & van IJzendoorn, 1997), we have demonstrated that a comparable measure of maternal warmth at age 4 was positively related to concurrent attachment security (Booth, Rose-Krasnor, McKinnon, & Rubin, 1994). Consequently, we hypothesized that age 8 maternal warmth would be positively related to age 4 attachment security—a proposition that is also consistent with the Sarason model.

Note that perceived available support stems from two sources in the model—the internal working model of the self (sense of acceptance) and the quality of primary relationships. Inclusion of measures of these constructs allowed us to test competing hypotheses regarding whether attachment security at age 4 or maternal warmth at age 8 would be the stronger predictor of perceptions of maternal support at age 8. Attachment theory (e.g., Bowlby, 1973) emphasizes the role of the child’s early experiences (though not negating the role of ongoing experiences) in forming the internal working models that are expressed behaviorally as secure or insecure attachment patterns. Thus, if perceptions of maternal support derive from the child’s internal working model of the mother-child relationship, we would expect age 4 attachment security (i.e., the behavioral expression of the internal working model) to be the stronger predictor of perceptions of maternal support at age 8.

Alternatively, if perceptions of maternal support stem from the child’s day-to-day experiences of the mother as available and sensitive, then we would expect that observed maternal warmth at age 8, rather than attachment security at age 4, would be more strongly related to age 8 perceptions of maternal support. These competing hypotheses were tested in the present report.

Beyond the mother-child relationship, it is the internal working model that is said to guide the child in the formation and development of relationships with others. With respect to peers, we have postulated that children who are securely attached are likely to feel secure, confident, and self-assured when introduced to novel social settings, and are likely to engage in active exploration of the social environment. Exploration of the social environment is likely to lead to peer play; these play experiences may result in the development of social competencies that should be apparent in interactions with peers (Booth et al., 1994; Rubin, Hymel, Mills, & Rose-Krasnor, 1991). Viewed in another way, children who are securely attached are likely to have positive social expectations of peers based on the mother’s meeting of the child’s needs in a positive way in infancy. Also, the feelings of self-worth and competence that derive from security within the primary attachment relationship may serve to make the child a more attractive social partner (Elicker, Englund, & Sroufe, 1992).

Links between attachment security with mother and social competence with peers have been demonstrated in previous reports about the present sample. We found that security of attachment in infancy was related to social competence with peers at age 4 (Booth, Rose-Krasnor, & Rubin, 1991). Similarly, we demonstrated that attachment security at age 4 was related to the child’s concurrent social competence, as well as to social competence and social-emotional adaptation at age 8 (Booth et al., 1994). Other researchers have demonstrated similar attachment-peer links both within and between the infancy and preschool periods (Lewis, Feiring, McGuffog, & Jaskir, 1984; Lieberman, 1977; Pastor, 1981; Sroufe, 1983; Turner, 1991), and from infancy into middle childhood (Elicker et al., 1992).

Although most of the studies linking attachment security with peer relationships have focused on unacquainted peers or classmates, only a few have been concerned with the connection between attachment and friendship during childhood (Elicker et al., 1992; Krollmann & Krappmann, 1996; Park & Waters, 1989; Shulman, Elicker, & Sroufe, 1994; Youngblade & Belsky, 1992). This is surprising, given that the most direct predictions from attachment theory deal with the connection between the quality of the child-mother attachment relationship and the quality of the child’s close relationships with others. Thus, in the present study we sought to extend our previous results to the realm of friendship, to determine whether attachment security would be related to perceptions of emotional support from the child’s best friend. We hypothesized that children who were securely
attached at age 4 would, at age 8, be more likely to report that their best friend was part of their emotional support network, and they would view this friend as being more available and efficacious in providing support than would children who were insecurely attached at age 4.

In addition to evaluating the relation between attachment security and perceptions of support, a primary goal of the present report was to determine whether, as indicated in the model, perceptions of support were related to adjustment outcomes (social engagement/acceptance, internalizing and externalizing problems) at age 8. The relative contributions of perceived support and attachment security to these outcomes were evaluated.

Although the Sarason model pertains to adjustment in adulthood, there are indications in the child development literature that perceptions of support are linked with children's positive adaptational outcomes (e.g., Bost, 1995; Bryant, 1985; Dubow & Ulman, 1989; Stocker, 1994; van Aken & Asendorpf, 1997). Thus, based on the model and on these other results, we hypothesized that perceptions of maternal and best friend support would be related to indices of social-emotional adaptation in the present study.

A final issue concerns the extent to which friend support may compensate for low maternal support. From the perspective of attachment theory, the quality of friendships would be expected to stem directly from, and be consistent with, the quality of the primary attachment relationships, and to be linked via the nature of the child's internal working model of self and others. Thus, the quality of friendship support may be one of the many mediating variables linking attachment security to outcomes. However, an alternative view of relationships with friends is that they may serve a compensatory function when family relationships are inadequate (see Cooper & Cooper, 1992) by providing the intimacy and support that is lacking in the family. This compensatory model typically refers to relationships in adolescence, but it may apply to middle childhood as well. According to this model, the presence of an emotionally supportive friend might be viewed as a moderating variable in the sense that the potentially negative effects of insecurity or lack of mother's support on social-emotional adaptation would be reduced. Stocker (1994), for example, found that in a sample of 8-year-olds, high friendship warmth compensated for low maternal warmth in terms of the children's adjustment scores. However, van Aken and Asendorpf (1997) did not find such compensatory effects. The present study afforded us an opportunity to test these competing attachment and compensatory hypotheses.

To summarize, we hypothesized that (1) attachment security at age 4 would be positively related to perceptions of emotional support from mother at age 8; (2) children who were securely attached at age 4, compared with those who were insecure, would be more likely to include their best friend in their emotional support network, and security would be positively related to perceptions of support from the best friend; and (3) social-emotional adaptation at age 8 would be positively linked with perceptions of emotional support from mother and from best friend. Additionally, we assessed whether attachment security at age 4 or maternal warmth at age 8 was the stronger predictor of perceived maternal support, and we assessed whether best friend support served a compensatory role, in the sense of enhancing social-emotional adaptation among children whose relationships with their mothers were less than optimal.

**METHOD**

**Overview**

During the first phase of this longitudinal research project, mothers and their 4-year-old children participated in a mother-child-peer interaction session. Each "focal" child was paired with an unacquainted, same-age, same-sex "control" peer (see details below). The focal children's mothers also participated. Among the various measures obtained at age 4, the primary focus in the present report is on the focal children's security of attachment to mother.

At age 8, each focal child returned to the laboratory for a peer-play session. Children were placed in quartets with unacquainted, same-age, same-sex playmates. Measures were obtained of child social and emotional adjustment in the areas of social competence and behavior problems. Additionally, each focal child was interviewed privately about his or her perceptions of emotional support. Several weeks after the peer quartet session, each mother and focal child returned to the laboratory for a mother-child play session, during which measures were obtained of the mothers' interactive style.

The data sources, coding schemes/measures, and variables used in the present report are summarized in Table 1.

**Participants**

The participants were 65 children and their mothers. As of the 8 year assessment, the mothers' mean
Table 1 Data Sources, Coding Schemes/Measures, and Variables

<table>
<thead>
<tr>
<th>Data Source</th>
<th>Coding Scheme/Measure</th>
<th>Variable</th>
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</thead>
<tbody>
<tr>
<td>Age 4: Observations (focal and control child, focal mother):</td>
<td>Reunion Rating Scale</td>
<td>Attachment Security</td>
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<tr>
<td>Separation/Reunion</td>
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<tr>
<td>Age 8: Observations (focal child, three peers):</td>
<td>Play Observation Scale</td>
<td>Social Engagement* (positive or neutral conversation/play)</td>
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<tr>
<td>Free Play</td>
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<td>Solitary play*</td>
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<tr>
<td>Ticket Sorting Observations (focal child, mother):</td>
<td>Ticket-Sorting Coding Scheme</td>
<td>Disruptive Behavior*</td>
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<tr>
<td>Free Play, Paper-Folding, Clean-up</td>
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</tr>
<tr>
<td>Interview (focal child)</td>
<td>Maternal Warmth and Control Ratings</td>
<td>Maternal Warmth (proximity, positive affect, positive control, responsivity)</td>
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<tr>
<td>Interview (all children)</td>
<td>My Family and Friends Playmate Ratings</td>
<td>Support Ranks and Ratings</td>
</tr>
<tr>
<td>Questionnaires (mothers)</td>
<td>Child Behavior Checklist</td>
<td>Internalizing Problems*</td>
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<td></td>
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<td>Externalizing Problems*</td>
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* Social engagement/acceptance factor.
† Internalizing factor.
‡ Externalizing factor.

Age was 35.4 (± 4.8) years; 3% had not completed high school, 8% had completed high school, 37% had completed some college, 29% were college graduates, and 23% had an advanced degree. Social status, as measured by the Hollingshead (1975) Four Factor Index, averaged 45.1 (± 12.3). Most of the mothers (78%) were married.

The children were European American primarily (89%); 55% were male and 63% were firstborn. The children were observed and assessed at 4.3 (± .1) years and again at 8.0 (± .15) years.

Part of the sample (n = 38) included longitudinal participants who had been recruited from previous studies in which the families were enrolled between the prenatal period and 20 months of age (see Booth et al., 1991, for further description); the remaining participants (n = 27) were recruited at 4 years of age. At the time of the 8 year assessments, the two groups of participants did not differ significantly in social status, maternal risk factors (depression, negative life events, lack of social support), or marital status. Thus, the two groups were combined for all analyses reported in the present article.

Procedure

Age 4—Peers and Mothers Session. Unacquainted, same-sex, same-age (± 3 months) children were assigned to dyads on the basis of attachment classifications at age 20 months (using the Strange Situation; Ainsworth et al., 1978) or at age 4 years (assessed prior to the Peers and Mothers Session, using the system developed by Cassidy and Marvin with the MacArthur Working Group, 1989). The dyads consisted of a control child who was securely attached, and a focal child who was either securely or insecurely attached to his or her mother.

The focal and control children and their mothers were videotaped interacting in a laboratory playroom (3.2 × 3.6 m), in a variety of structured and unstructured situations (see Booth et al., 1994, for details). During one part of the session (15 min), both mothers were out of the room while their children interacted. The focal mother returned to the room first, and her reunion with her child was videotaped for 5 min.

Age 8—Peer Quartet Session. At age 8, each focal child returned to a larger laboratory playroom (4 × 4.5 m) to be videotaped interacting with a new set of three unacquainted, same-sex, same-age (± 6 months) control peers, who were recruited via posters placed in schools, community centers, and the like. All control children met the criterion of behavior-problem scores below the clinical cut-off on the Child Behavior Checklist (Achenbach, 1991), a 118 item parent-completed checklist that yields summary T scores for internalizing and externalizing difficulties. The observational paradigm (see Rubin, Lynch,
Coplan, Rose-Krasnor, & Booth, 1994) comprised several segments, including a Free-Play Session with age-appropriate toys (20 min), a Ticket-Sorting Session during which each child was required to sort tickets cooperatively with the other members of the quartet (10 min), and a Novel Toy Session during which a single remote-controlled car was introduced to the playroom (20 min). The play segments and the observational measures derived from them (see below) were designed to highlight individual differences in children's social engagement, as well as expressions of internalizing and externalizing difficulties. Our specific approach was based on demonstrating that comparable play scenarios and measures at age 4 were related to attachment security and/or maternal behavior (see Booth et al., 1994).

At the end of the session, each child was interviewed separately, and confidentially, to obtain peer perceptions about the other members of the quartet. Each child was asked the following set of five questions about the other quartet members individually, using photographs taken at the beginning of the laboratory session: (1) “How much did you like to play with [child’s name]?” (2) “How much did you like to work with [child’s name]?” (3) “How much did [child’s name] cooperate or help?” (4) “How much did [child’s name] argue or fight?” and (5) “How shy was [child’s name]?” A five point rating scale (from “not at all” to “a lot”) was used for each question. The scores for the first three questions were highly intercorrelated and therefore were averaged to produce an acceptance index.

Following the playmate rating task, the focal child was taken to a private room for administration of My Family and Friends (Reid et al., 1989), an interview measure designed to assess 6- to 12-year-old children’s perceptions of the availability of social support from individuals in their network, and their satisfaction with the support they receive.

In the first part of the assessment, the interviewer filled out a set of cards, with the child’s help, naming potential members of the child’s support network—mother, father, siblings, best friend, relative, teacher, and others. Note that at this point in the assessment the child was asked to name all siblings, a best friend, a relative, and a teacher. For the best friend, the child was asked, “Tell me the first name of the friend that you do things with or talk to the most often—your best friend.” All of the children were able to name a best friend. In the second part of the assessment, the child was asked a series of five emotional support questions. In response to each question, the child used the cards to select and rank members of the support network from among the total set of potential members shown on the cards. This was accomplished by having the child place the selected cards in a slotted ranking board to indicate the individuals he or she would turn to in that situation (typically a subset of the cards), and the order in which he or she would turn to these individuals.

The five questions concerned perceptions of support for (1) talking about feelings, (2) telling about something good that happened, (3) telling about something bad that he or she did, (4) making the child feel good about him- or herself, and (5) knowing or understanding him or her. For example, the child was asked, “If you want to talk about your feelings (like feeling happy, sad, or mad), which of these people do you go to the most often?” (pause) “Look at all the cards and put the card for the person that you talk to the most often in the first slot.” (pause) “Who do you talk to the next most often?” and so forth.

Following completion of the ranking task for each question, the child used a cardboard “barometer” to rate, on a three point scale, the extent to which each person makes him feel better in that situation.

**Age 8—Mother-Child Session.** Several weeks after the Peer Quartet Session, each focal child and mother returned to a different laboratory playroom (3.2 × 3.6 m) for a videotaped Mother-Child Play Session. The session included 10 min of mother-child Free Play with the toys that had been used in the Peer Quartet Session, 10 min of a joint Paper-Folding Task, and Clean-Up.

**Observational Coding**

Four observational coding schemes were used to code the videotaped data: (1) the Reunion Rating Scale (Booth & Perman, 1989) to evaluate the child’s security of attachment to mother at age 4, (2) the Maternal Warmth and Control Rating Scales (Rubin & McKinnon, 1993) to code maternal warmth during various segments at age 8, (3) the Play Observation Scale (Rubin, 1989) to code the child’s social behavior in the peer quartet at age 8, and (4) the Ticket-Sorting Coding Scheme (Coplan, Rubin, Fox, Calkins, & Stewart, 1994) to assess the child’s disruptive behavior during this task at age 8. Data were coded independently for each coding scheme by separate sets of blind observers.

**Attachment security.** The Reunion Rating Scale (RRS; Booth & Perman, 1989) was used to evaluate each focal child’s security of attachment to mother at age 4. The RRS is a five point version of the nine point security rating scale developed by Cassidy and Marvin with the MacArthur Working Group (1989) to as-
sist observers in assigning attachment classifications to preschoolers on the basis of child-mother reunion behavior. RRS points were assigned as follows: 1 = very insecure, 2 = insecure, 3 = mixed, 4 = secure, 5 = very secure.

One RRS coder, who was unaware of previous attachment classifications, completed ratings on all study tapes. The coder participated in the MacArthur Attachment Working Group, and was tested and certified to be reliably trained (criterion = .75) by Cassidy on the Cassidy and Marvin system, using a set of standard test tapes. On the test tapes, the coder's nine point security ratings correlated with the standard at \( r(18) = .83 \). The RRS coder achieved a reliability of .75 (intraclass correlation coefficient) with a second RRS coder, who was also trained, tested, and certified on the Cassidy and Marvin system. The validity of the RRS has been demonstrated in terms of relations with toddler and preschool attachment classifications and concurrent maternal sensitivity (see Rose-Krasnor, Rubin, Booth, & Coplan, 1996).

**Maternal Warmth and Control Rating Scales.** These scales (Rubin & McKinnon, 1993) consist of a series of three point ratings in the areas of hostile affect, negative affect, negative control, proximity, positive affect, responsivity, and positive control. Ratings of the videotaped interactions were completed after every minute of interaction during the mother-child Free Play, Paper-Folding, and Clean-Up segments, and averaged across minutes. Interobserver agreement on the scales ranged from .80 to .99, based on 10% of the cases.

**Play Observation Scale.** The Play Observation Scale coding taxonomy (POS; Rubin, 1989) was used to assess the focal children's social and nonsocial behavior during videotaped free play interaction in the peer quartet. Data were coded every 10 s into one of the following social participation categories: onlooker behavior; unoccupied activity; and solitary, parallel, or group play. Nested within the latter three categories were the cognitive play categories of functional-sensorimotor, constructive or dramatic play, and games-with-rules. Also, exploratory activity and conversations in the absence of play were coded. Data were converted to proportions of total time intervals and subjected to arcsine transformation. Cohen's kappa, on 20% of the videotapes, averaged .86 for social and cognitive play categories.

**Ticket-Sorting Coding Scheme.** This coding scheme (Coplan et al., 1994) was used to assess the proportion of time spent in on- and off-task behavior during the 10 min segment in which the children were asked to sort tickets cooperatively. Behaviors were considered "off-task" if they did not include such actions as picking up and placing the tickets in various piles or talking about the task at hand. Off-task behavior was divided further into Unoccupied and Disruptive categories (i.e., " goofing off" or disrupting others from the task at hand). Interobserver agreement for on/off-task behavior during ticket sorting was .83 based on 20% of the cases.

**Measures**

**Attachment security—age 4.** The Reunion Rating Scale score was used as the measure of security of attachment to mother at age 4. Note that all references to security of attachment in the following text refer to these RRS scores.

**Maternal warmth—age 8.** The maternal warmth summary score comprised the summed z scores for ratings of proximity, positive affect, responsivity, and positive control. Internal consistency (\( \alpha \)) of the composite was .68, and stability (\( r \)) in relation to a comparable maternal warmth score at age 4 was .62.

**Perceptions of support—age 8.** Ranks for each person in the network (mother, father, sibling, friend, relative, teacher) were averaged across the five emotional support items of My Family and Friends. Each average rank was converted to a proportion of the total number of network members the child included. Proportions were multiplied by 100 and subtracted from 100 (so that high scores indicated lower, i.e., more favorable, ranks). Ratings of the effectiveness of emotional support were also averaged across items for each network member.

**Child social and emotional adjustment—age 8.** The various measures of age 8 child social and emotional adjustment, shown in Table 1, were aggregated via principal components analyses with varimax rotation (see Booth et al., 1994) to yield scores for (1) social engagement/acceptance (from POS social engagement and playmate acceptance ratings), (2) internalizing problems (from POS solitary play and CBCL scales (Rubin et al., 1994) was used to assess the proportion of total time intervals and subjected to arcsine transformation. Cohen's kappa, on 20% of the videotapes, averaged .86 for social and cognitive play categories.

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1. Responsivity was a five point rating.

2. The assessment was designed so that the child could include as many as six siblings, two "best" friends, two relatives, and two "others" (in addition to mother, father, and teacher) in their emotional support network. However, it was relatively rare for the child to name more than one sibling (\( n = 18 \)), one friend (\( n = 8 \)), one relative (\( n = 12 \)), or anyone in the "other" (\( n = 2 \)) category. Consequently, the first sibling, friend, and relative named were included in the analyses, and the "other" category was dropped. However, all siblings, friends, relatives, and others that the child included in the network were counted in the computation of the total number of network members, which was used to convert the support rankings to proportions.
internalizing score), and (3) externalizing problems (from ticket-sorting disruptiveness, playmate aggression ratings, and CBCL externalizing score).

RESULTS

All analyses were performed separately by sex due to previous reports of sex differences in children’s friendships and in their social-support networks (e.g., Bryant, 1985; Parker & Asher, 1993). Also, children with RRS scores of 3 (seven of the 65 participants), that is, with indications of both security and insecurity, were omitted from all analyses. This procedure allowed us to split the sample into secure and insecure groups for some analyses.

Attachment Security and Maternal Support

It was hypothesized that attachment security at age 4 would be positively related to children’s perceptions of emotional support from mother at age 8. Bivariate correlational analyses confirmed that the RRS score at age 4 was significantly related to the average (across items) maternal support ranking at age 8, \( r(56) = .43, p < .001 \) for the total group; \( r(32) = .29, p < .05 \) for boys; \( r(22) = .61, p < .001 \) for girls. The RRS score was not related to the average rating of how much better the child would feel after receiving support from the mother, \( r(56) = -.06 \) for the total group; \( r(32) = -.02 \) for boys; \( r(22) = -.14 \) for girls.

Predictors of maternal support. We also assessed whether attachment security at age 4, or the quality of the mother’s behavior in interaction with her child at age 8, would be the stronger predictor of perceived maternal support. Bivariate correlations indicated that maternal warmth at 8 years was not significantly related to the mothers’ support ranking, \( r(45) = -.05 \) for the total group; \( r(25) = .13 \) for boys; \( r(18) = .04 \) for girls. Also, maternal warmth was not significantly related to the mothers’ support rating for the total group, \( r(45) = -.02 \), or for boys, \( r(25) = -.28 \), but it was significantly related to the mothers’ rating for girls, \( r(18) = .48, p < .05 \).

To pursue this question further, hierarchical multiple-regression analyses were performed. In the first analysis, the mothers’ rank score was the dependent variable, and attachment security at age 4 and maternal warmth at age 8 were the independent variables. Attachment security was entered first, followed by maternal warmth. The results indicated that preschool attachment security was a significant predictor of mothers’ support rank in middle childhood, for the total group, \( \beta = .54, t = 4.14, p < .001 \), and for both boys, \( \beta = .40, t = 2.12, p < .05 \), and girls, \( \beta = .73, t = 4.15, p < .001 \), separately. Maternal warmth did not contribute significant additional variance. These results were confirmed using a more conservative test in which warmth was entered prior to security.

In the second analysis, the dependent variable was the mothers’ support ranking. For the total group and for boys, neither attachment security at age 4 nor maternal warmth at age 8 predicted the rating. However, for girls, maternal warmth was the only significant predictor, regardless of order of entry, \( \beta = .52, t = 2.44, p < .05 \).

Attachment Security and Other Sources of Support

Best friend as a source of emotional support. It was hypothesized that securely attached children would be more likely to include their best friend as a source of emotional support in the ranking task than would insecurely attached children. This hypothesis was tested via an attachment (secure, insecure) × best friend (included, not included) chi-square analysis. Children who had included the best friend on at least four of the five emotional support items for My Family and Friends comprised the “included” group. Sixty percent of the secure children and 38.9% of the insecure children included their best friend as a source of emotional support. Contrary to our hypothesis, this difference was nonsignificant, \( \chi^2(1, N = 58) = 2.23 \). Separate attachment × best friend analyses by sex yielded similar results. Among the boys, 62.5% of the secure group included their best friend, compared with 40.0% of the insecure group, \( \chi^2(1, N = 34) = 1.45 \). Among the girls, 56.3% of the secure group and 37.5% of the insecure group included their best friend, \( \chi^2(1, N = 24) = .76 \).

Support ranks and ratings—friend and others: Table 2 shows the mean rank scores (by sex) for perceived support from mother, father, sibling, best friend, relative, and teacher, as well as the mean ratings of the effectiveness of support from each person. As we would expect in this age group, parents were viewed as more primary sources of emotional support than were siblings, friends, relatives, or teachers. However, the ratings of effectiveness did not appear to vary systematically in this way.3

3. Note that statistical tests were not performed because a within-subjects analysis across members of the support network would have selected only those children who included mother, father, sibling, best friend, relative, and teacher in their network.
Correlations between attachment security and support ranks and ratings for all categories are also shown in Table 2. It was hypothesized that attachment security would be positively related to perceived best friend support. This hypothesis was not supported. As shown in the top section of Table 2, attachment security among the boys was not related to the best friend’s rank or rating. However, attachment security was positively related to mother’s rank (as indicated above).

Among the girls (bottom section), attachment security was negatively related to the best friend’s rating, and was in the same direction for the best friend’s ranking, although this correlation was not statistically significant. Additionally, attachment security was positively related to the rankings of mother and sibling (and father, although not significantly), and negatively related to the ranking of the relative and the rating of the effectiveness of teacher support. In other words, attachment security was linked with greater emotional reliance on family members and less reliance on those outside the family.

Social-Emotional Adaptation and Support from Mother and Best Friend

It was hypothesized that social-emotional adaptation at age 8 would be positively linked with perceptions of maternal and best friend support. Additionally, we assessed whether best friend support served a compensatory function with regard to the social-emotional adaptation of insecurely attached children.

Mother’s rank and rating. The hypothesized positive relations between perceptions of maternal support and the child’s social-emotional adaptation were not supported. Correlational analyses indicated that the ranking and the rating of mother’s support were not significantly related to any of the measures of social-emotional adaptation, either for the total group, or for boys and girls separately, rs(22–56) ranged from −.22 to .24.

Best friend as a source of emotional support. For the three measures of social-emotional adaptation, t tests were used to compare children who did, versus those who did not, include their best friend as a source of emotional support. However, these analyses were not significant.
emotional support. For the total group, those children who included their friend, compared with those who did not, scored significantly higher on the social engagement/acceptance factor: $M = .24 \pm .81$ versus $M = -.33 \pm 1.01, t(56) = 2.37, p < .05$. (Note that after removing the variance due to the relation between attachment security and social engagement/acceptance, $p = .06$.) This pattern was also observed separately for girls ($M = .44 \pm .96$ versus $-.37 \pm 1.05$), $t(22) = 1.97, p < .05$, and for boys ($M = .11 \pm .69$ versus $-.29 \pm 1.01$), $t(32) = 1.38, p < .10$. The remaining analyses comparing the two groups on the internalizing and externalizing factors were not significant.

**Best friend's rank.** Bivariate correlations between the best friend's rank and the dependent variables indicated that, contrary to our hypothesis, the higher the friend's rank, the greater the externalizing problems, for boys only, $r(21) = .41, p < .05$. None of the other correlations was significant.

Recall that 21 of the 58 children did not include their best friend in their emotional support network. Consequently, these children had missing data for the friend's rank. To solve the problem of a reduced $n$ for subsequent analyses involving the friend's rank, those children who did not include their best friend were assigned a score of “1” on this variable. Consistent with the above, this “corrected” best friend rank variable was significantly related to externalizing problems for boys only, $r(32) = .32, p < .05$, and none of the other correlations yielded significant results.

**Best friend as compensatory.** There are several ways to test whether best friend emotional support serves a compensatory role when the mother-child relationship is less than optimal. One way is to evaluate whether friend support moderates attachment security, such that under conditions of insecure attachment to mother, social-emotional adaptation might be more positive when friend support is high than when it is low. A test of this nature would involve including a security $\times$ friend support interaction term in multiple-regression analyses predicting outcomes. Another way to test for compensatory effects would be to use perceived maternal support as the indicator of the quality of the mother-child relationship. That is, among children with low support from mother, the links between friend support and social-emotional adaptation could be evaluated via inclusion of a mother support $\times$ friend support interaction term. Given that attachment security was strongly related to these social-emotional outcomes (see Booth et al., 1994), but perceived maternal support was not, the former method was chosen and is presented below.

Specifically, a series of hierarchical multiple-regression analyses was performed in which the predictors were (in order) attachment security at age 4, the best friend's rank (corrected) at age 8, and the interaction between these two variables. If the attachment hypothesis is correct, then we would expect a main effect of attachment security, and perhaps of the friend's rank, but the interaction term would not be significant. If the compensatory hypothesis is correct, then we would expect a significant interaction term. The results for each of the three indices of social-emotional adaptation, for the total group and for boys and girls separately, are shown in Table 3.

For the social engagement/acceptance analyses, $R^2 = .25$ for the total group, .16 for boys, and .42 for girls. As expected from previous analyses (Booth et al., 1994), preschool attachment security was the primary positive predictor of social engagement/acceptance for the total group. Neither the best friend's rank nor the interaction term made a significant contribution to the prediction of this outcome. A similar pattern was obtained for the boys and girls separately. The absence of a significant interaction term indicates that emotional support from the best friend did not compensate for the lower social engagement/acceptance scores of the insecure children.

In the analyses of internalizing problems, $R^2 = .10$ for the total group, and .11 for both boys and girls. For the total group, attachment security was the primary negative predictor, and neither the best friend's rank nor the interaction term was significant. This pattern was similar but not significant in the separate analyses of boys and girls.

For externalizing problems, $R^2 = .09$ for the total group, .14 for boys, and .11 for girls. For the total group, attachment security was not a significant predictor. However, both the best friend's rank and the interaction term were significant. Specifically, the higher the best friend's rank, the higher the externalizing score. This pattern was similar but not significant in the boys' and girls' analyses.

4. The lowest rank score for children who did include their best friend was 4.00, and the highest was 71.25. A score of 1 rather than 0 was assigned for those who did not include their friend because the latter score would have been problematic in constructing interaction terms for the multiple-regression analyses described below.

5. Subsequent analyses demonstrated that inclusion of the mother support $\times$ friend support interaction term did not yield significant results for this term, and did not change the pattern of results.
Table 3  Security and Support from Best Friend as Predictors of Social-Emotional Adaptation

<table>
<thead>
<tr>
<th></th>
<th>Social Engagement/ Acceptance</th>
<th>Internalizing Problems</th>
<th>Externalizing Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(r) (\beta) (t)</td>
<td>(r) (\beta) (t)</td>
<td>(r) (\beta) (t)</td>
</tr>
<tr>
<td>Total ((n = 58)):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>.49*** (.49) .34*** (-.30)**</td>
<td>-.37 -2.34* -.04 .13 .81</td>
<td></td>
</tr>
<tr>
<td>Friend rank</td>
<td>.15 .17 .48 .01 -23 -.57 .15 .91 2.28*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security × friend rank</td>
<td>.24* -.08 -.21 -.03 .30 .72 .05 -.84 -2.00*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys ((n = 34)):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>.39** (.45) 2.26* -.30* -.38 -1.85 .13 .20 1.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friend rank</td>
<td>.04 .33 .50 .04 -.36 -.52 .32* 1.00 1.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security × friend rank</td>
<td>.08 -.36 -.53 .02 .46 .66 .28* -.73 -1.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls ((n = 24)):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security</td>
<td>.61*** (.61) 2.67** -.33* -.36 -1.28 -.18 .07 .24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friend rank</td>
<td>.28 .27 .62 -.01 -.05 -.09 .02 .71 1.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security × friend rank</td>
<td>.43* -.05 -.10 -.11 .08 .13 -.14 -.79 -1.35</td>
<td></td>
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</tr>
</tbody>
</table>

Note: For each dependent variable, the first column shows the bivariate correlations with each predictor. The second and third columns indicate the \(\beta\) and \(t\) values for each predictor in a hierarchical multiple-regression analysis.

\(* p < .05; ** p ≤ .01; *** p ≤ .001.\)

To evaluate the nature of the security × best friend rank interaction, the externalizing score was correlated with the friend’s rank for secure and insecure participants separately. Among the secured, the best friend’s rank was not significantly related to externalizing problems, \(r(38) = .02\). However, among the insecurities, this relation was significant, \(r(16) = .52, p < .001\). These data suggest that when a child is insecurely attached, reliance on a friend for emotional support may potentiate rather than reduce externalizing problems, which is the opposite of the effect we expected.

**DISCUSSION**

Perceptions of Support

As hypothesized, attachment security at age 4 was positively related to children’s perceptions of maternal emotional support at age 8. Specifically, attachment security was related to the children’s ranking of the mother as a source of support relative to other members of the network, but was related to perceptions of the efficacy of maternal emotional support for girls only.

These results are significant in that they suggest a degree of continuity in the child’s internal working model of the self in relation to mother, from the preschool period to middle childhood. That is, the child’s behavior toward mother upon reunion is presumed to reflect an internal representation of the relationship, in the sense that children who are classified as securely attached are those who experience themselves as worthy of love, and experience their mothers as emotionally available and responsive (Bowlby, 1973; Bretherton, 1985; Main et al., 1985). Thus, the nature of a child’s internal working model of the primary attachment relationship is expressed behaviorally at age 4, but can be evaluated at a more abstract cognitive level in middle childhood. Children who are securely attached in the preschool years (i.e., who experience the mother as a supportive presence) are likely, in middle childhood, to view the mother as an important source of emotional support. Such continuity in internal working models is predicted by attachment theory but has been challenging to demonstrate in the middle childhood years. Thus, one of the more significant aspects of the present results is the demonstration of this continuity, as well as the successful employment of an assessment procedure to tap the nature of the child’s internal working model of the self in relation to mother in middle childhood.

It is interesting that the mother’s rank, rather than her rating, was the stronger of the two variables in terms of their relations with attachment security. This result supports the Sarason et al. (1990) model, in which perceptions of the availability of support are more closely linked to the sense of acceptance (i.e., the internal working model of self as valued) than are perceptions of support actually received. Also, it
should be noted that the interview procedure used in the present report may have reduced the variance in the support ratings so that significant results were less likely to be obtained with this variable. That is, for each interview question, the child selected and rated only those network members who he or she would actually approach for emotional support. By narrowing the child's choices in this way, it is possible that network members from whom the child would receive unsatisfactory support (and low ratings) were already eliminated from consideration by the child.

Presumably, mothers of securely attached children provide a sensitive, responsive, emotionally supportive environment for their children. In our previous analyses of this sample (Booth et al., 1994) we found that, as expected, attachment security and observed maternal warmth at age 4 were significantly related. Also, maternal warmth was relatively stable from age 4 to age 8, $r(56) = .62$. Consequently, it is interesting that the children's perceptions of the availability of support from mother at age 8 were related to their preschool attachment security for both boys and girls, but were unrelated to the mothers' contemporaneous warmth. The latter variable was related only to the girls' perceptions of satisfaction with support received. It could be the case that by middle childhood, the child's internal working models are more likely to be self-reinforcing than to be influenced by the mother's behavior. Alternatively, the sample of interaction in the laboratory may have been somewhat unrepresentative of the mothers' usual behavior. Nonetheless, these data, in general, would seem to support an "early experience" model of attachment.

Attachment theory and research led us to expect that children who were securely attached to their mothers would be more likely to have emotionally supportive friendships. Thus, we hypothesized that attachment security would be related to including the best friend in the emotional support network, giving the best friend a relatively high ranking, and rating the friend's support as relatively effective. Unexpectedly, the results contradicted our hypotheses. First, we found that securely attached children were no more likely than insecurely attached children to include their best friend in their emotional support network. This is consistent with the results of Shulman et al. (1994), who found that preadolescents with secure or insecure attachment histories did not differ significantly in the extent to which they reported they had, or were observed to have, a close friendship. Second, among those boys who included their best friend, the ranking of the friend and the rating of effectiveness of support from the friend were unrelated to attachment security. Finally, among those girls who included their best friend, the less securely attached they were, the higher they rated the effectiveness of support received from the friend. The relation between the friend's rank and attachment security was in the same direction, $r(12) = -.40$, although not statistically significant.

These sex differences were apparent, as well, in the ranking of other members of the emotional support network. The general pattern in the boys' group was one of nonsignificant relations between attachment security and the ranks and ratings of other network members. However, in the girls' group, the less securely attached they were at age 4, the lower they ranked immediate family members and the higher they ranked those outside their immediate family at age 8. Also, the greater the insecurity, the higher the perceived efficacy of support from the teacher (and the best friend), but not from family members. Although it is true that the rank scores are not independent of one another (i.e., assigning a rank to one member of the network automatically gives lower scores to other members), the pattern of results is interesting. They suggest that girls who are insecurely attached to their mothers are more likely to turn to sources of support outside their immediate family than are girls who are securely attached. The general pattern in the present report, and the typical pattern in other studies (Bost, 1995; Bryant, 1985), was one of greater reliance on family members.

Social-Emotional Adaptation

The implications of these results must be considered within the context of the social-emotional adaptation of these children. In general, it is clear that these outcomes were predicted more strongly by preschool attachment security than by perceptions of emotional support. Perceptions of support from mother were not related to social-emotional adaptation, but support from best friend was related to these outcomes.

As hypothesized, children who included their best friend in their emotional support network had higher social engagement/acceptance scores than children who did not include their friend. That is, socially competent behavior with peers was linked with perceptions of an emotionally supportive connection with the best friend. However, among insecurely attached children, the greater the reliance on the best friend for emotional support, the greater the externalizing problems. This pattern may be especially problematic for girls, whose degree of insecurity was
linked with stronger reliance on extrafamilial sources of emotional support, including the best friend. In general, perceiving that one's best friend is a potential source of emotional support may indicate a certain degree of social competence and maturity, but excessive reliance on the friend for support may have negative consequences.

Taken together, these results suggest a developmental scenario in which the most positive social-emotional outcomes at this age may be found among children with a secure attachment history plus the developmental maturity to begin moving outside the circle of the immediate family for emotional support. These children may be developing “chumships” (Sullivan, 1953) earlier than would be expected. For these children, we would speculate that the quality of their relationships with friends would be high. In contrast, the best friendships of the insecurely attached children might arise from less healthy (and early) intimacy and support needs that are not being met in the home environment. We would expect the friendships of these insecure children to be of lower quality. Additionally, the potential for the development and expression of problematic (e.g., externalizing) behaviors might be exacerbated to the extent that insecurely attached children form best friendships with one another. In fact, Cairns, Cairns, Neckerman, Gest, and Gariépy (1988) and Tremblay, Mâsse, Vitaro, and Dobkin (1995) found that the friendship networks of aggressive-rejected children are likely to consist of other aggressive children.

We began this report with two competing views of the links between relationships with family and friends. According to the attachment perspective, the experience of emotional support within the family facilitates the development of a cognitive representation of relationships that is likely to foster the growth of positive relationships with friends. The nature and quality of these friendships may be viewed as positive outcomes in and of themselves, or as mediating variables linking attachment security with more global indices of social-emotional adaptation. In contrast, the compensatory model would view friendship variables as moderators of the effects of family relationships, in the sense that the less-than-optimal social-emotional outcomes that would be predicted from poor quality family relationships (and concomitant insecurity) could be improved by the development of supportive friendships.

The attachment model was only partly supported in this study. Although security was not related to friendship in expected ways, the link between best friend support and social-emotional adaptation varied as a function of the child's underlying attachment security. However, no support was found for the compensatory model at this age. Excessive reliance on the best friend for emotional support among those children presumably not receiving adequate support at home (i.e., insecures) was related to externalizing problems rather than to positive outcomes.

These results are not completely congruent with other studies showing positive links between attachment security and friendship (e.g., Elicker et al., 1992) or between friendship and social-emotional adaptation (e.g., Parker & Asher, 1993). However, these results are consistent with recent reports that best friendships among children identified as rejected and aggressive during middle childhood were related to externalizing problems concurrently (Hoza, Molina, Bukowski, & Sippola, 1995) or in later years (Kupersmidt, Burchinal, & Patterson, 1995). The present results are also reminiscent of an unexpected finding in a study of peer social status and friendship in 8-year-olds (Vandell & Hembree, 1994). Contrary to the hypothesis that friendships would be especially beneficial for rejected children, Vandell and Hembree found that rejected children who had friends had poorer self-concepts than rejected children who did not have friends. The authors concluded that, as suggested by Parker and Asher (1993), the friendships of rejected children are less emotionally supportive and more negative than the friendships of other children (see also Hartup, 1996; Rubin, Bukowski, & Parker, 1997).

Although the insecurely attached children in the present study did not rate their best friend as less emotionally supportive than did the securely attached children, we suspect that there may be other differences in the quality of these friendships (e.g., conflict resolution, instrumental support, reciprocity, intimacy) (Krollmann & Krappmann, 1996; Shulman et al., 1994). These potential differences in friendship quality, which may account for the differences between the present results and previous reports, warrant further exploration using more extensive and intensive assessments of friendship quality and friendship networks (Bukowski & Hoza, 1989). Additionally, a larger sample size that includes more insecurely attached children would be helpful in addressing these and other issues raised in this article.

Taken together, the results indicate the complexity of family-peer links in middle childhood, and they highlight the need for additional understanding of the processes connecting internal working models of relationships, the development of an emotional support network, and the quality and functions of friendships in the middle-childhood years. The model de-
developed and being tested by Sarason et al. (1990) relating attachment security to perceptions of support and to adjustment outcomes in adulthood provided a useful theoretical framework for studying the relations among these variables. Further efforts to adapt and apply this model to the childhood years may prove fruitful.

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ADDRESSES AND AFFILIATIONS

Corresponding author: Cathryn L. Booth, University of Washington, CHDD 106 South Building, Box 357920, Seattle, Washington 98195-7920; e-mail: ibcb@u.washington.edu. Kenneth H. Rubin is at the University of Maryland; Linda Rose-Krasnor is at Brock University.

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