

---

Working and Playing Together: Prediction of Preschool Social-Emotional Competence from Mother-Child Interaction

Author(s): Susanne A. Denham, Susan M. Renwick and Robert W. Holt

Source: *Child Development*, Apr., 1991, Vol. 62, No. 2 (Apr., 1991), pp. 242-249

Published by: Wiley on behalf of the Society for Research in Child Development

Stable URL: <https://www.jstor.org/stable/1131000>

#### REFERENCES

Linked references are available on JSTOR for this article:

[https://www.jstor.org/stable/1131000?seq=1&cid=pdf-reference#references\\_tab\\_contents](https://www.jstor.org/stable/1131000?seq=1&cid=pdf-reference#references_tab_contents)

You may need to log in to JSTOR to access the linked references.

---

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



Society for Research in Child Development and Wiley are collaborating with JSTOR to digitize, preserve and extend access to *Child Development*

JSTOR

# Working and Playing Together: Prediction of Preschool Social-Emotional Competence from Mother-Child Interaction

Susanne A. Denham, Susan M. Renwick,  
and Robert W. Holt

George Mason University

DENHAM, SUSANNE A.; RENWICK, SUSAN M.; and HOLT, ROBERT W. *Working and Playing Together: Prediction of Preschool Social-Emotional Competence from Mother-Child Interaction.* CHILD DEVELOPMENT, 1991, 62, 242-249. The impact of mother-child interaction on preschoolers' social-emotional competence was evaluated. Twenty-five girls and 23 boys (mean age = 44 mos) and their mothers were videotaped performing four play/teaching tasks. Preschool teachers completed the Baumrind Preschool Behavior Q-Sort and the Behar Problem Behavior Questionnaire. Mother-child interaction aggregates represented task orientation, positive emotion, and allowance of autonomy/reliance on mother. Results indicated that specific maternal interaction aggregates coherently predicted the children's Positive Social Behavior, Assertiveness, and Sadness in the preschool setting. Child aggregates were less effective predictors of teachers' ratings. Several gender differences in the prediction of social-emotional competence were found (e.g., maternal allowance of autonomy predicted girls' sadness, but boys' sadness was predicted by their own negative emotion). These findings' contributions to the parent-child literature are discussed.

How does the quality of parent-child interaction, from both the child's and the parent's perspective, contribute to the child's ability to interact independently with peers? Attachment theory proposes that aspects of infants' relationships with other persons affect their social-emotional competence (Ainsworth, Blehar, Waters, & Wall, 1978). Most commonly, research following this postulate has sought to predict social-emotional competence in early childhood from the quality of the parent-infant relationship (e.g., Pastor, 1981; Waters, Wippman, & Sroufe, 1979).

According to the organizational perspective, successful negotiation of this early relationship prepares the child for the major developmental transition to peer competence during the preschool years (Waters & Sroufe, 1983). This view also underscores the importance of parents' sensitivity to the developing preschooler's increasing coordination of affect, cognition, and behavior (i.e., structuring experience while allowing the child autonomy, and leading the child to social and cognitive successes; Hartup, 1989).

The authors extend hearty thanks to the mothers and children who participated in this study with such enthusiasm, as well as to Susan Poretz, Jean Palmer, Mari Rippey, and Sally Warren, who completed the teacher ratings. The first author was supported by University Grants 2-10150, 2-10176, and 20073 during the completion of this research. Reprint requests can be sent to the first author at George Mason University, Department of Psychology, 4400 University Drive, Fairfax, VA 22030.

[*Child Development*, 1991, 62, 242-249. © 1991 by the Society for Research in Child Development, Inc. All rights reserved. 0009-3920/91/6202-0001\$01.00]

Both attachment and organizational outlooks suggest that the quality of the parent-child relationship during the preschool years could either support or place at risk the child's developing social-emotional coping and capabilities in the peer setting. Yet techniques for assessing the quality of the parent-child relationship during preschool have most often addressed either the parent's contributions (e.g., Baumrind, 1971) or the child's security of attachment (e.g., Carmichael-Olson, 1987; Waters & Deane, 1985). This study examines the relation of both mother's and child's mobilization of intra- and interpersonal resources, during interaction with each other, to teacher ratings of social-emotional competence.

## Research Goal

Everyday interactions between mother and child provide a rich context for exploring the mother-child relationship; these transactions often tax the behavioral and adaptive capacities of both dyad members, requiring them to balance the following: (a) task-oriented demands (i.e., "getting the job done"); (b) the child's autonomy demands

and dependency needs (i.e., "I want to do it my way" vs. "Do it for me, Mommy"), and the mother's response to them; and (c) modulation of the transaction's affective content (i.e., "enjoying each other's company"). This study's goal is to measure these broad aspects of the dyadic relationship and, from them, to predict the child's social-emotional competence in preschool.

*Maternal influences.*—Earlier research evidence suggests that children who cope less skillfully with the demands of peer interaction may have mothers who: (a) cannot set limits to focus them on current tasks, (b) cannot support their attempts at autonomy and mastery (i.e., becoming the preschooler's equivalent of a "secure base"), or (c) become angry during interaction (Baumrind, 1971; Cummings, Zahn-Waxler, & Radke-Yarrow, 1981; Denham, 1989a; Matas, Arend, & Sroufe, 1978; Zahn-Waxler, Cummings, McKnew, & Radke-Yarrow, 1984). In this study, such nonoptimal maternal management of the mother-child relationship during interaction is expected to predict problematic social-emotional outcomes during peer interaction in the preschool (e.g., difficulties in planning activities for self and peers, in behaving nurturantly toward peers, or in regulation of aggression and other negative affect and behavior; see Charlesworth & Hartup, 1967; Kopp, 1989; Waters et al., 1979).

*Child influences.*—At the same time, the child's contribution to the parent-child relationship, and to peer competence, should not be overlooked; effects are bidirectional in the mother-child system (Bell, 1979). Preschoolers experience the conflict between obedience and newfound independence from mother; they also learn to manage their own negative reactions to being thwarted (Erikson, 1963; Goodenough, 1931). Attachment theory also would suggest that the child's avoidance of maternal interaction and resistance toward maternal initiatives continue to bode ill for the child's social-emotional development (Ainsworth et al., 1978). In this study, the child's more optimal management of dyadic interaction, indexed by compliance with directions, persistence, affection, and lack of dependence or avoidance, is expected to predict social-emotional strengths during peer interaction in the preschool. Finally, because earlier research has often discovered gender differences in the impact of parenting styles (e.g., Baumrind & Black, 1967), the efficiency of

specific maternal and child predictors will be compared for girls and boys.

## Method

### Subjects

Subjects were 48 preschoolers (23 boys and 25 girls), aged 33 to 56 months ( $M = 44.36$ ,  $SD = 5.61$  months), and their mothers. The children were enrolled in five classrooms of the laboratory preschool of a medium-sized university in the suburb of a major city. Families were middle to upper-middle class; mothers' education ranged from high school diploma to postgraduate degree.

### Procedure and Measures

*Predictors.*—Children and their mothers were videotaped engaging in four challenging play/teaching tasks (developed and validated by Egeland & Sroufe; see Egeland, Sroufe, & Erickson, 1983). One problem involved copying block structures from pictures printed on cards. Another involved correctly placing pieces of different colors and shapes into a form board, according to a pattern printed on a card. In a third problem, the children were required to trace a half-inch-wide path drawn on an Etch-a-Sketch. The last task involved verbal fluency; children were required to name objects with wheels. The mothers' only direction was to help in any way they saw fit but not to do the tasks for their children. The dyads worked 15–30 min.

Maternal ratings included supportive presence, limit setting, allowance of autonomy, negative affect, quality of instructions, and confidence. Child ratings included persistence, enthusiasm, affection, negative affect, the valence of their experience in session, compliance, reliance on mother, and avoidance of mother. Each scale, for both criteria and predictors, is defined in Table 1.

*Measurement of predictors.*—All variables were coded on seven-point scales, depicted in Egeland and Sroufe's system by detailed scale definitions and rank-ordered descriptions of behavioral episodes fitting each scale point. The main coder, who matched each subject's behavior to the most similar episode/scale point, was blind to the study's hypotheses, to teacher ratings of social-emotional competence, and to subjects' identities.

A second coder rated 33 of the 48 subjects for interrater reliabilities, which were

TABLE 1  
 DESCRIPTIONS OF INTERACTION, PBQ, AND BPB SCALES

<i>Parent Interaction Variables</i>	
Supportive .....	Positive regard and emotional support
Limit setting .....	Establishing and reinforcing clear expectations
Autonomy .....	Recognition of the validity of the child's individual motives and perspective
Negative affect .....	Anger, discounting, and rejection
Instructions .....	Directives are clear; mother makes sure that child understands task objectives
Confidence .....	Demonstrates confidence that interaction will be successful
<i>Child Interaction Variables</i>	
Persistence .....	Child is problem oriented, stays on task
Enthusiasm .....	Vigor, confidence in abilities, eagerness
Affection .....	Positive regard for mother; shares happy affect
Negative affect .....	Anger, dislike, hostility
Experience .....	Demonstrates enhanced self-esteem, feelings of success and competence regarding the task, and confidence in the relationship
Compliance .....	Obedying task directions
Reliance .....	Depends on mother to help/take initiative
Avoidance .....	Avoiding interaction with mother in any way
<i>Criterion Variables</i>	
Friendliness .....	Empathic, nurturant, thoughtful, unselfish, helpful, altruistic; does not bully, insult, or behave thoughtlessly
Assertiveness .....	Peer leader, has "a mind of his/her own," plans activities for self and others, individualistic, resists domination
Aggression .....	Fights, destroys, bullies, kicks, blames, inconsiderate, does not share
Sadness .....	Fearful, stares, miserable, cries, gives up

NOTE.—See Egeland, Sroufe, and Erickson (1983) for detailed parent-child interaction rating scale definitions.

assessed by Finn's  $r$  (a kappa-like statistic for ordinal rating scales, which controls for chance agreement; Whitehurst, 1984). Finn's  $r$ 's were in the good to excellent range: these ranged from .90 to 1.00 for supportive presence, limit setting, quality of instructions, maternal confidence, child negative affect, compliance, reliance on mother, child affection, and avoidance; from .80 to .89 for allowance of autonomy, maternal negative affect, and child enthusiasm; and from .70 to .79 for child persistence and experience in the session. After reliability calculation, disagreements of more than two scale points were reconciled by discussion.

*Data reduction of predictors.*—In order to reduce the number of predictors and thus lessen the number of necessary statistical tests, maternal and child interaction variables were factor analyzed separately, using varimax rotation. Examination of scree plots of eigenvalues for both factor analyses showed the clear emergence of three conceptually similar maternal and child factors. Factor loadings, sums of squared factor loadings, and percent variance accounted for by each factor are shown in Table 2.

Interaction aggregates for each maternal or child factor equaled the mean of standardized scores for component variables which met the criterion of a .45 factor loading. Thus, a set of six conceptually and empirically related interaction aggregates, to be used in analyses to follow, was extracted from the original 14 scales. See Table 2 for Cronbach's alpha for each.

*Criteria.*—Each subject's teacher completed the Baumrind Preschool Behavior Q-Sort (BPB; Baumrind, 1968) and the Behar Problem Behavior Questionnaire (PBQ; Behar & Stringfield, 1974). For the BPB, teachers sort 72 cards bearing descriptions of child social behaviors into nine piles to indicate how well each describes the child. BPB friendliness and assertiveness scales were used in this study because of their posited centrality in children's social competence. On the PBQ, a 30-item questionnaire, the teacher indicates the relative frequency of problem behaviors by a score of 0 to 2. PBQ aggressiveness and sadness scales were used to represent externalizing and internalizing dimensions of social incompetence. The difference between standard scores for

TABLE 2  
FACTOR ANALYSES OF PREDICTOR VARIABLES

	FACTOR LOADINGS		
	Task Orientation	Autonomy/Reliance	Positive Emotion
<b>Maternal variables:</b>			
Support .....	.632	.604	.283
Limit setting .....	.926	-.039	.150
Autonomy .....	.001	.946	.204
Negative affect .....	-.173	-.310	-.912
Quality of instructions .....	.904	.272	-.009
Confidence .....	.807	-.023	.471
SSLs .....	2.76	1.43	1.20
% variance .....	45.90	23.83	20.00
Alpha .....	.90	.70	.66
<b>Child variables:</b>			
Persistence .....	.925	-.038	.224
Enthusiasm .....	.882	-.152	.224
Affection .....	.442	.353	.544
Negative affect .....	-.151	.147	-.903
Experience in session .....	.844	-.097	.204
Compliance .....	.740	-.019	.543
Reliance on mother .....	-.160	.934	-.125
Avoidance of mother .....	-.546	.268	-.655
SSLs .....	3.44	1.12	1.99
% variance .....	43.0	18.7	33.2
Alpha .....	.93	.. <sup>a</sup>	.74

<sup>a</sup> This factor consists of only one scale; thus, alpha could not be calculated.

BPB friendliness and PBQ aggression scales was used to represent *positive social behavior* because of substantial negative intercorrelation between the two scales ( $r = -.76$ ,  $p < .001$ ; aggregate's coefficient alpha = .84). Assertiveness and sadness scales were used as separate criterion variables.

Teachers were blind to the hypotheses of the study and to interaction coding. A second teacher completed each measure for each child approximately 9 months after the first measurement. Test-retest reliabilities for positive social behavior, assertiveness, and sadness equaled .63, .62, and .43 ( $p$ 's < .001, .001, and .01, respectively). The concurrent validity of each criterion has been established by its correlations with independent classroom observations of subjects' expressed emotions and reactions to peers' emotions for a subset of these subjects (see Denham & Burger, 1989).

## Results

### *Maternal and Child Behavior*

Mothers and their children interacted positively. Compared to girls, boys experi-

enced more allowance of autonomy ( $p < .05$ ); they also were less reliant on mothers ( $p < .05$ ). Children were rated by teachers as moderately positive and assertive in their social behavior and low on sadness. In the preschool classroom, boys demonstrated less positive social behavior than girls ( $p < .01$ ).

### *Relations among Maternal and Child Behaviors*

There was adequate variation in both sets of variables to proceed with correlational analyses. Clearly, behaviors of interactional partners are likely to be related; correlations among maternal and child predictors, which are shown in Table 3, confirm this supposition.

### *Prediction of Social Behavior*

Correlations between interactional predictors and the social-emotional criteria are shown in Table 4. Maternal task orientation was negatively correlated with sadness. Autonomy and positive maternal emotion were associated with assertiveness. Child task orientation was positively correlated with assertiveness. Similarly, child positive emotion showed a significant positive correlation with assertiveness.

TABLE 3  
CORRELATIONS AMONG PREDICTORS

MATERNAL FACTORS	CHILD FACTORS		
	1	2	3
1. Task orientation .....	.78***	-.06	.67***
2. Autonomy/reliance .....	.62**	-.07	.65***
3. Positive emotions .....	.52**	-.40**	.53**

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

*Unique maternal predictors.*—Separate hierarchical regression equations were constructed to evaluate the unique contribution made by each maternal interaction aggregate. Age and gender were entered first; thus, effects of predictors were unconfounded by teachers' differential rating of children of varying age or gender. The child interaction aggregate was entered on the next step. On the last step, the unique increase in variance accounted for by the maternal interaction aggregate predictor was tested for significance.

Gender differences in prediction also were evaluated via hierarchical regression equations, as follows: child sex and the maternal aggregate were entered on the first step; the interaction term (i.e., child sex  $\times$  maternal aggregate) was entered on the second step. If the interaction term's contribution to  $R^2$  was significant in the original equation, separate regression equations for girls and boys were used to assess gender differences in the uniqueness of each maternal aggregate as a predictor of social-emotional competence.

A third set of regression equations was constructed to evaluate the overall contribution of maternal interaction aggregates to the prediction of a social competence composite variable: the average of standard scores for the three criterion variables. First, in one equation all three maternal interaction aggregates were entered together as predictors of *average social competence*. In a second regression equation, maternal interaction aggregates were entered on the third step, after age and sex on the first step, and all child interaction aggregates on the second step. Significant findings from the three sets of regression analyses follow.

Mother's pleasant structuring of the session (i.e., maternal task orientation) buffered the child from sadness, irrespective of the child's own task orientation,  $F(4,43) = 4.55$ ,  $\beta = -.50$ ,  $p < .05$ . It also made a unique positive contribution to girls', but not boys', positive social behavior,  $F(3,21) = 6.84$ ,  $\beta = .68$ ,  $p < .05$ .

Maternal allowance of autonomy made a unique positive contribution to the predic-

TABLE 4  
CORRELATIONS AMONG PREDICTORS AND CRITERION VARIABLES

	CRITERIA		
	Positive Social Behavior	Assertiveness	Sadness
<b>Maternal predictors:</b>			
Task orientation .....	.26	.26	-.31*
Allowance of autonomy .....	.09	.32*	-.07
Positive emotion .....	.14	.47**	-.20
<b>Child predictors:</b>			
Task orientation .....	.09	.28*	-.13
Reliance on mother .....	.06	-.18	-.17
Positive emotion .....	-.03	.36*	-.22

\*  $p < .05$ .

\*\*  $p < .01$ .

tion of assertiveness,  $F = 5.00$ ,  $\beta = .35$ ,  $p < .05$ , over and above children's reliance on mother. Mothers' allowance of autonomy also positively contributed to daughters', but not sons', positive social behavior,  $F(3,21) = 8.39$ ,  $\beta = .57$ ,  $p < .01$ , over and above the girls' own reliance on their mothers.

To explore the possibility of a more complex linkage between the allowance of autonomy aggregate and sadness, the contributions of this maternal interaction aggregate's two components were examined separately. Entered on the third step of the regression equation after age and sex (step 1) and the child reliance on mother (step 2), these components uniquely predicted sadness, but in different directions,  $F = 5.21$ ,  $p < .01$ ,  $\beta_{\text{support}} = -.33$ ,  $\beta_{\text{autonomy}} = .39$ . Such freedom without support was experienced negatively, especially by girls: the autonomy scale uniquely predicted girls' sadness,  $F(2,22) = 5.52$ ,  $\beta = .47$ ,  $p < .05$ .

Maternal positive emotion also uniquely predicted increased assertiveness,  $F = 4.09$ ,  $\beta = .37$ ,  $p < .05$ . Mothers who reacted positively to children's individuality during interaction had children who were more assertive in the preschool classroom.

In the regression equation evaluating the contribution of all three maternal interaction aggregates to average social competence, the final  $R^2$  was .216 ( $p = .01$ ). When the three maternal interaction aggregates were entered after sex and age, and the three child interaction aggregates, their contribution to the final  $R^2$  of .383 ( $p < .01$ ) was .126 ( $p = .06$ ).

*Unique child predictors.*—When similar regression equations were set up to assess unique prediction of criteria, no child interaction aggregate uniquely predicted positive social behavior, assertiveness, or sadness after the corresponding maternal interaction aggregates were entered. Similarly, when all three child interaction aggregates were entered in regression equations predicting average social competence, their contributions were nonsignificant.

The high intercorrelations between maternal and child task orientation, and maternal and child positive emotion, suggest that they overlap in their joint contribution to assertiveness. For example, mothers' confident, positively toned organization of the tasks is likely to lead to more compliant, focused children. Children's expression of positive emotion also may be sequentially

dependent on mothers' positive emotion (see Denham, 1989b). However, our results do suggest that, at least for boys, the expression of positive emotion may directly generalize to the preschool setting. Thus, boys' positive emotion during interaction uniquely predicted their lack of sadness in the preschool classroom,  $F(3,19) = 6.82$ ,  $p < .05$ ,  $\beta = -.72$ .

## Discussion

In contrast with earlier research, dyadic interaction was used to assess the *unique* contribution of both mother and child to preschoolers' social-emotional competence in a peer setting. Results yielded both new evidence and support for earlier research (see especially MacDonald & Parke, 1984, and Putallaz, 1987). As hypothesized, zero-order correlations showed that mothers' task orientation (i.e., ability to support the child and to create appropriate structure and limits), positive emotion (i.e., lack of hostility and confidence in successful interaction), and allowance of autonomy were predictive of preschoolers' social-emotional competence. Although maternal and child interaction aggregates were related, it was generally mothers who "led" interaction and whose interactional characteristics uniquely predicted children's peer competence.

These findings suggest that young children's social-emotional competence is in part dependent on maternal interactional behavior, during both ongoing mother-child interaction and peer play. It could be that a preschooler is capable of expressing certain social behaviors in mother's presence but not able to manifest those behaviors in the more trying peer arena. Alternatively, more proximal child variables, such as discrete emotions displayed by children in either parent-child or peer settings, may be more important in predicting social competence with peers (see Denham & Burger, 1989). Moreover, fathers' contributions to preschoolers' social competence also may be relevant, and should be assessed (see MacDonald & Parke, 1984).

Some variables originally significant in zero-order correlations were *not* unique predictors of social-emotional competence; this fact highlights the necessity of viewing dyadic functioning as a multivariate unit. For example, children's positive emotion was significantly correlated with assertiveness, but because it also was highly related to maternal emotion during interaction, it did not

uniquely predict assertiveness in the hierarchical regression. In future research, procedures should be undertaken to assess dyadic (i.e., parent-child) influence even more directly, perhaps by actually coding joint states.

*Maternal task orientation.*—Maternal task orientation did not uniquely predict either positive social behavior or assertiveness in the preschool for the total sample. As cogently asserted by Lewis (1981) and rephrased by Baumrind (1989), the contribution of firm control to social-emotional competence may be sufficient, but not necessary, to promote friendly, assertive behaviors in preschoolers.

Maternal task orientation did, however, uniquely buffer children from experiencing and exhibiting sadness in the preschool classroom (see Denham, 1989a). Perhaps mothers' confident, positively toned structuring of the dyad's shared tasks enabled the child to feel successful; if this maternal style, reminiscent of Baumrind's warm but limit-setting authoritative parenting style, prevails in other settings, the child may indeed feel more confident and emotionally positive. Maternal scaffolding may influence social-emotional as well as cognitive aspects of development.

*Maternal allowance of autonomy.*—As attachment theory would predict, the delicate balance of maternal support and allowance of autonomy remains important in these children's lives. In this study, these attributes predicted the age-appropriate ability to assert oneself socially.

The pattern of maternal lack of support and allowance of autonomy predicted sadness and paints a picture of rejection, suggestive of Baumrind's (1989) neglecting parenting style. Current results suggest that girls are particularly at risk as a result of such treatment. Allowance of autonomy, more freely given to boys, may not be experienced as rejection by them (although lack of mothers' supportive presence may be). In contrast, the prediction pattern for boys' sadness highlighted their own emotions.

Regarding other gender differences, socially positive girls may model their mothers' pattern of keeping a social agenda in a friendly way, while allowing for their peers' autonomy. Boys exhibited less positive social behavior than girls overall, and this lower level of positive social behavior was not predicted by any aspect of mother-child interaction. In general, there were fewer

gender differences in predictions than found by MacDonald and Parke; differences in measuring parental behavior may account for some of this inconsistency.

*Expressed emotion.*—The emergence of emotion factors sets this study apart from nondyadic research in this area. Mothers' expression of emotions and sons' emotion regulation were influential in predicting assertiveness and sadness in the preschool classroom. Similar findings have been reported by both MacDonald and Parke (1984) and Putallaz (1987). Findings from all three studies emphasize the cross-situational importance of emotionality in the parent-child relationship; emotional positivity in the parent-child dyad predicts developmentally appropriate emotional and behavioral competence with peers.

More specifically, maternal anger and negativity has been previously identified as a disregulating influence on children's social-emotional competence, both during immediate interaction with mother and on a broader level (Crockenberg, 1987; Cummings et al., 1981; Denham, 1989a, 1989b; Putallaz, 1987; Zahn-Waxler et al., 1984). In this study, mothers' inability to regulate such hostility and to interact with positive emotion uniquely predicted withdrawn, ineffectual engagement in the peer group (i.e., nonassertiveness). These findings extend earlier data on maternal anger; they suggest that maternal positive emotion and lack of anger influence older preschoolers' ability to marshal social-emotional resources, to be effective in their newly important peer relationships.

These findings also make a methodological contribution: dyadic relationship variables assessed in a seminaturalistic setting are able to predict temporally stable social-emotional competence in a naturalistic setting. In comparison with the exhaustive home visits that yielded Baumrind's (1971, 1989) extremely rich data, the methods adapted here require much less time for data collection and coding and allow for dyadic data. Moreover, this coding system ultimately may prove useful in answering applied questions; Pianta, Erickson, Wagner, Kreutzer, and Egeland (1990) find it promising for predicting early school problems. More extensive research will be needed to determine whether this system can continue to add to our knowledge of the complex and important stream of interaction between parents and their children.

## References

- Ainsworth, M. D. S., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation*. Hillsdale, NJ: LEA.
- Baumrind, D. (1968). *Manual for the Preschool Behavior Q-Sort*. Berkeley: University of California.
- Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monographs*, 4, 99–103.
- Baumrind, D. (1989). Rearing competent children. In W. Damon (Ed.), *Child development today and tomorrow* (pp. 349–378). San Francisco: Jossey-Bass.
- Baumrind, D., & Black, A. E. (1967). Socialization practices associated with dimensions of competence in preschool boys and girls. *Child Development*, 38, 291–326.
- Behar, L., & Stringfield, S. (1974). A behavior rating scale for the preschool child. *Developmental Psychology*, 10, 601–610.
- Bell, R. Q. (1979). Parent, child, and reciprocal influences. *American Psychologist*, 34, 821–826.
- Carmichael-Olson, H. (1987, April). *Assessing the parent-preschooler relationship from an attachment perspective*. Poster presented at the biennial meetings of the Society for Research in Child Development, Baltimore.
- Charlesworth, R., & Hartup, W. W. (1967). Positive social reinforcement in the nursery school peer group. *Child Development*, 38, 993–1002.
- Crockenberg, S. (1987). Predictors and correlates of anger toward and punitive control of toddlers of adolescent mothers. *Child Development*, 58, 964–973.
- Cummings, E. M., Zahn-Waxler, C., & Radke-Yarrow, M. (1981). Young children's responses to expressions of anger and affection by others in the family. *Child Development*, 52, 1274–1282.
- Denham, S. A. (1989a). Maternal affect and toddlers' social-emotional competence. *American Journal of Orthopsychiatry*, 59, 368–376.
- Denham, S. A. (1989b). *Maternal emotional responsiveness and toddlers' social-emotional competence*. Unpublished manuscript.
- Denham, S. A., & Burger, C. (1989). *Observational validation of ratings of preschoolers' social competence and behavior problems*. Manuscript submitted for publication.
- Egeland, B., Sroufe, L. A., & Erickson, M. (1983). The developmental consequences of different patterns of maltreatment. *International Journal of Child Abuse and Neglect*, 7, 459–469.
- Erikson, E. H. (1963). *Childhood and society* (2d ed.). New York: Norton.
- Goodenough, F. L. (1931). *Anger in young children*. Minneapolis: University of Minnesota Press.
- Hartup, W. W. (1989). Social relationships and their developmental significance. *American Psychologist*, 44, 120–126.
- Kopp, C. (1989). Regulation of distress and negative emotions: A developmental view. *Developmental Psychology*, 25, 343–354.
- Lewis, C. C. (1981). The effects of parental firm control: A reinterpretation of findings. *Psychological Bulletin*, 90, 547–563.
- MacDonald, K., & Parke, R. D. (1984). Bridging the gap: Parent-child play interaction and peer interactive competence. *Child Development*, 55, 1265–1277.
- Matas, L., Arend, R. A., & Sroufe, L. A. (1978). Continuity in adaptation: Quality of attachment and later competence. *Child Development*, 49, 547–556.
- Pastor, D. L. (1981). The quality of mother-infant attachment and its relation to toddlers' initial sociability with peers. *Developmental Psychology*, 17, 326–335.
- Pianta, R. C., Erickson, M. F., Wagner, N., Kreutzer, T., & Egeland, B. (1990). Early predictors of referral for special services: Child-based measures versus mother-child interaction. *School Psychology Review*, 19, 240–250.
- Putallaz, M. (1987). Maternal behavior and children's social status. *Child Development*, 58, 324–340.
- Waters, E., & Deane, K. E. (1985). Defining and assessing individual differences in attachment relationships: Q-methodology and the organization of behavior in infancy and early childhood. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment: Theory and research* (pp. 41–65). *Monographs of the Society for Research in Child Development*, 50(1–2, Serial No. 209).
- Waters, E., & Sroufe, L. A. (1983). Social competence as a developmental construct. *Developmental Review*, 3, 79–97.
- Waters, E., Wippman, J., & Sroufe, L. A. (1979). Attachment, positive affect, and competence in the peer group: Two studies in construct validation. *Child Development*, 50, 821–829.
- Whitehurst, G. J. (1984). Interrater agreement for journal manuscript reviews. *American Psychologist*, 39, 22–28.
- Zahn-Waxler, C., Cummings, E. M., McKnew, D., & Radke-Yarrow, M. (1984). Affective arousal and social interaction in young children of manic depressive parents. *Child Development*, 55, 112–122.