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The Differences Between Mother-Infant and Father-Infant Interactions at Nine Months

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Running Head: MOTHER-INFANT AND FATHER-INFANT INTERACTIONS

ABSTRACT

This study examined the differences in interactions between mothers and fathers with their infants. Videotaped segments of parent-infant dyads (thirty mothers and thirty fathers) were examined. Four interaction areas were looked at specifically -- (1) respect for autonomy/cognitive growth fostering, (2) quality of instruction, (3) enthusiasm for interaction with parent/responsiveness to parent, and (4) task orientation. These interactions were chosen from reviews of past literature that showed mothers to be more task oriented and fathers to be more playful. A fifth factor, warmth, was also explored. It was found that parents differed significantly on task orientation, with infants being more oriented when working with their mothers. Similarly, fathers were found to score higher on the scale for warmth.

The Differences Between Mother-Infant and Father-Infant Interactions at Nine Months

Typically, the behaviors of fathers when interacting with infants have been found to be quite different from those of mothers. When fathers do interact with infants it traditionally has been less often in the areas of care and nurturance and rather in the domain of playful exchanges (Sroufe, Cooper & DeHart, 1992). In fact, this pattern carries over even in countries such as Sweden, where fathers are often given paid paternity leave from work, therefore being able to be more involved than the traditional American father. One study (Lamb, Frodi, Hwang, Frodi, & Steinberg, 1982) noted that varying interaction styles between mother and father are not due to the amount of time each spends with the infant as a caregiver. Fathers who are primary caregivers behave similarly to those who are secondary caregivers. This indicates that these parental styles are not easily altered by changing the traditional parental roles; these styles may be deeply internalized during the years of sex role socialization preceding parenthood, or they may even be biological in origin.

In the following paragraphs we will discuss what is already known about mother-infant interactions and father-infant interactions. A comparison of mother-infant and father-infant interactions will then be reviewed. Previous results from the data used in this experiment will also be discussed.

Mother-Infant Interactions

Much research done on mother-infant interactions has built on attachment theory (attachment being defined by Bowlby (1969/1982) as "an enduring emotional tie between infant and care giver"), and was especially spawned by the Strange Situation procedure introduced by Ainsworth and Wittig in 1969 (Sroufe, 1985).

According to Ainsworth there are two types of attachment -- secure and anxious -- identified through the Strange Situation procedure. In this procedure, the caregiver (who was always the mother in Ainsworth's experiments) and the infant (aged one year in the

original experiments, but inclusive of eleven month olds through four year olds) entered a laboratory playroom, where the infant was free to explore. During the course of their time in this room, the infant was exposed to a variety of situations -- having a strange adult enter the room with or without the mother present, being left alone briefly, and being reunited with the mother. The infant's reactions during the Strange Situation are thought to reveal the sort of attachment the infant has with the caregiver. It was found that approximately seventy percent of the infants were securely attached. This means that they showed a good balance between play/exploration and seeking proximity to the mother. They separated readily from the mother to explore, a minor source of stress did not overly upset them, but they quickly found the mother after a brief separation from her and stayed with her until reassured. The comfort they received was often smooth and rapid. The infant was quickly exploring again after the comforting. The infant's responses to the mother were emotionally positive, often smiling at and sharing discoveries with the mother. In contrast, anxiously attached infants do not have this balance. They are unable to use the caregiver as a source of security.

Anxious attachment is further broken down. Anxious resistant infants do not readily leave the mother despite the numerous and attractive toys available to them in the Strange Situation procedure. When they do finally break away, a minor stress will send them running back to the mother. They are extremely upset if the mother leaves, even for a short period of time. However, when the mother returns, she is unable to comfort the infant. Most importantly, they tended to mix their needs for physical closeness with resistance. For example, if the infant had his arms extended to his mother so that she would hold him, the infant would begin squirming to get down as soon as she picked him up. Anxious avoidant infants separated quickly from their mothers in the Strange Situation procedure and showed little to no stress upon the introduction of a stranger or the removal of the mother from the room. However, upon the reintroduction of the mother into the room, the infants actually avoided contact with her by turning away,

increasing their distance from her, or defiantly ignoring her. Furthermore, upon a second separation from the mother, the infants clearly became more upset, yet the avoidance became even more pronounced upon her reintroduction (Ainsworth, Blehar, Waters, & Wall, 1978).

Since Ainsworth's work, Main, at the University of California, has introduced a new category to the anxious type of attachment -- disorganized-disoriented (Main & Hesse, 1990). These infants show contradictory features of several patterns. They may appear dazed, confused, or even depressed. Their movements may be incomplete or very slow, even to the point of motionlessness. Main agues that these infants have no consistent way of relating to their caregiver when they are stressed, probably due to some persistent threat or incoherence in the caregiver's behavior.

In general, mothers provide the care and the nurturance needed by the child. Parke and Stearns (1993) combine evidence of this from numerous studies. A study performed by Neville and Parke (1987) of approximately 300 families of children from infancy through adolescence found that it is the mother who acts in a teaching role, helping children with schoolwork, arts-and-crafts, etc. Another study by Power and Parke (1982) suggests that it is the mother who acts as disciplinarian, setting the limits and boundaries, at least for the first two years of a child's life. They further assert a finding by Parke and Bhavnagri (1989) that mothers manage their children's activities, such as making appointments or supervising activities with friends.

A tremendous amount of research, past and present, has focused on the area of mother-child interactions, often excluding the role the father has with his children. This practice is now widely criticized. However, this emphasis arose, according to Sroufe et al. (1992), because mothers have traditionally had the more major direct impact on their children. Also, the importance of the mother's care was "the cornerstone of psychoanalytic theory," (Sroufe et al., 1992, p.51) which was very popular in the early

part of this century. However, developmentalists have realized a need to expand the traditional view of the family.

Mother-Infant versus Father-Infant Interactions

Griswold (1993) emphasizes, in defense of fathers, that "the father" has never been defined. The definitions of fatherhood have coexisted and supplanted one another for centuries. However, the core component in most of the definitions, the thing that distinguishes fathers, is the father as the breadwinner of the family structure. Griswold then asserts that even the meaning of breadwinning has changed from group to group and over time, however "nothing has changed and continues to change (the definition of) fatherhood more than the collapse of men's monopoly on breadwinning" (Griswold, 1993, p. 4). This change was not accomplished, he explains, back in the twenties when experts on child development first declared that increased involvement by the father would improve the quality of the child's development, because traditional gender roles were not yet being questioned. Fathers were urged to help their wives, not replace them or share in the day-to-day responsibilities of parenthood with them. This change was accomplished during the eighties, a time when liberal feminist ideologies were emerging, where the basic assumption was that the roles of both men and women must change if a "more fair, equitable, and workable social contract is to emerge" (Lamb, 1993, p. 1048). Where does this new definition of "the father" leave the children? Do they now receive increased involvement with their fathers, and does this lead to a higher quality of development?

Rebelsky and Hanks (1971) found that fathers in the nineteen sixties and early nineteen seventies interacted with their 0- to 3-month-old infants 2.7 times per day, averaging a total interaction time of 37.7 seconds per day. Any verbal interactions of the fathers with their infants took place during caretaking activities (e.g., feeding, diapering) 54 percent of the time and during non-caretaking activities 46 percent of the time.

Moreover, the total number of interactions steadily decreased during the first three months of life.

As noted, fathers appear to spend little time vocalizing to their infants. In the study by Rebelsky and Hanks (1971), the number of father-infant interactions varied more than did the number of mother-infant interactions by time of the day, age of the infant, sex of the infant, and the activity occurring during the interaction. Fathers were shown to spend less time verbalizing to their infants in the second month and a half of life than in the first month and a half, while mothers' verbalizations increased during the first three months of life. It has also been noted that during verbal interactions fathers asked for more labels and explanations (e.g., "What is this?"), fathers used more adult language (e.g., "frustrating"), and fathers asked for more repetitions and clarifications than did mothers (Masur and Gleason, 1980).

Moreover, Lamb, et al. (1982) compiled numerous studies from the nineteen seventies, conducted in home settings, that agreed that fathers provide more "unpredictable, arhythmic, and physical stimulation" during play with children ages 2 to 13 months of age (p. 215). This compilation comes primarily from the following studies: Lamb (1976, 1977) found that while mothers were more likely to initiate conventional games, fathers were likely to initiate more physically stimulating and unpredictable play. Other studies found that mothers were more likely than fathers to hold their infants, and when mothers did hold their infants it was often for caretaking purposes (Belsky, 1979; Lamb, 1977), while when fathers held their infants it was often to play (Lamb 1977). Lamb cited other studies as well that reconfirm the above ideas of the character association of fathers as robust, physically stimulating players (e.g., Clarke-Stewart, 1978; Power & Parke, 1979; Russell, 1982).

Therefore, in terms of infants' attachment toward their parents, Lamb (1976) found that 18-month-old infants directed more distal/affiliative behaviors (i.e., associative or connective attachment, less affectionate attachment) toward fathers, but

showed no preference for either parent in the display of proximal/attachment behaviors (i.e., loyal and affectionate attachment) in initial testing situations. However, upon entrance of a stranger into the testing situation, combined with boredom and fatigue, the infants displayed more proximal/attachment behaviors toward their mothers, while there was no preference shown for either parent in the display of distal/affiliative behaviors.

The major confound of the above studies is that, in terms of attachment, when fathers are put into a laboratory setting and expected to perform, they appear to take on the stereotypically "motherly" characteristics. Belsky, Gilstrap, and Rovine (1984) verified this through a compilation of naturalistic observations that continue to show exceedingly less father-infant involvement in everyday activities, as compared to the lab setting in which competence is mainly what is being studied. The differences have been found to hold true, in naturalistic observation, even in families where the father has been the primary caretaker for a substantial portion of the infant's first year of life. It has therefore been theorized that mothering and fathering are, for both parent and child, quite distinct, even though similarity is found when parent-infant interaction is studied from a developmental perspective in the laboratory. This is an important issue to keep in mind when assessing results.

Similarly, outside of the laboratory Parke and Stearns (1993) have observed that both mothers and fathers tend to show more positive emotion toward their children when they are together than when they are by themselves.

While these data on quality of father-infant interactions appeared to hold true even into the nineteen eighties and nineteen nineties, further research was done on the quantity of father-infant interactions. The often cited study by Rebelsky and Hanks (1971), that has been cited above, claiming that fathers spend only 37.7 seconds per day interacting with their infants, is being dismissed. Snarey (1993) has compiled numerous studies that show this change: A U.S. Census Bureau survey indicates that fathers now provide the primary care for 25% of preschool age children and 11% of school age

children whose mothers work part time, and for 10% of preschool age children and 5% of school age children whose mothers work full time. Snarey offers the idea that fathers' childcare time is higher when their wives work part time because the couple is able to use a shift-work system, rather than the highly structured system needed when mothers work full time. Adding to this, a Gallop Poll found that 10% of men reported taking "all or most" of the responsibility for childcare when their children are home sick from school and 28% of men reported taking "all or most" of the responsibility for disciplining their children. These reports were consistent with the reports of the women in the poll. Another study reported by Lamb (1981) echoed these results by showing that fathers visit their hospitalized premature babies equally as often mothers do.

In summary, we see that mothers are still seen as the primary caregivers. They are nurturant to their children. They spend more time with their children. Fathers are still seen in a secondary parenting role as compared to the mother. Fathers are not seen as being responsible for their children, they are seen as being there just to play with them from time to time. However, we also see these roles slowly fading away, making room for the fathers to become a more integral part of the family structure.

The present study specifically will compare mother-infant and father-infant interactions in terms of their differences. The subjects have been videotaped in their home settings and have been given a specific task -- the parent is to try to get the infant to vocalize. The video segments are coded for various behaviors that are then analyzed and compared for differences.

Previous Results

Research has previously been conducted with the Twin Infant Project (TIP) sample that was used for this study. The TIP was a longitudinal study of seven- and nine-month-old twins, originally designed to better understand cognitive development (see DiLalla et al., 1990).

Using the TIP data, the quality of mother-infant interactions has been assessed by DiLalla and colleagues. DiLalla, Wingo, and Bishop (1994) studied the mechanisms involved in differential mother/child interactions. The study examined the heritability of infant vocalization behavior and differential maternal treatment to those vocalizations. Results showed a higher heritability of vocalization at 9 months of age than at 7 months of age, which suggests that genetic influences become more important as vocalizations become more mature. Secondly, the results yielded significant correlations between the infants' vocalizations and the mothers' acknowledgments of those vocalizations at both 7 and 9 months, but not between the infants' vocalizations and the mothers' verbal attempts. Likewise, the duration of the mothers' acknowledgments were more similar across their two children for identical versus fraternal twins at both ages, but this distinction was not noted for the mothers' verbal attempts. These findings suggest that the direction of effect is from infant to mother -- infants who vocalized more had mothers who more often acknowledged their vocalizations, however these mothers did not necessarily attempt to elicit vocalizations any more than the mothers whose infants vocalized less often.

In addition to the TIP videotapes, Bishop and DiLalla (1995) used the MacArthur Longitudinal Twin Study (MLTS), a longitudinal study of the TIP twins tested at fourteen and twenty-four months, to determine whether or not infant gender impacted mother-infant interaction at 7, 9, 14, and 24 months of age. The videotapes were analyzed using a global, behaviorally-based coding scheme. Two sets of regression analyses were performed at each age with gender as the independent variable. The results of the study showed that infant gender has little or no effect on mother-infant interaction at 7, 9, 14, or 24 months. In this study, as well as in previous studies (see Feingold, 1993, 1994; Gennaro, Tulman, & Fawcett, 1990), mothers were found to treat male and female children similarly and male and female children were found to behave similarly.

DiLalla (1995) used the TIP videotapes to further explore differential mother-sibling interactions in early infancy, believing there to be evidence of maternal, rather

than infant, effects. Distinguishing between monozygotic and dyzygotic pairs, the results showed almost no evidence for heritability for any of the behaviors examined at 7 and 9 months. Interestingly, it was found that both monozygotic and dyzygotic twins were extremely dissimilar on measures of vocalizing and crying, yet their mothers were extremely similar on measures of control and warmth. This finding suggests that very young infants tend to have a passive or null effect on their environment.

DiLalla and Bishop (1996) used the TIP videotapes to study differential mother-sibling interactions. First of all they found that infant attention behaviors were influenced primarily by unique environment, while temperament behaviors were influenced by both unique environment and genetic effects. Secondly, they found that mothers treated the twins similarly, whether they were monozygotic or dyzygotic twins, which suggests that the mother-infant interactions were driven by the maternal characteristics.

Again utilizing the TIP videotapes, the present study compared the differences between the interactions of infants with their mothers versus their fathers, not in terms of who is better, but in terms of the differences, so that we can, in future research, see how these styles influence the development of the child. It was believed that the results would show differences in the parenting styles of fathers and mothers. Specifically, the researcher expected to find that fathers were more playful with their children, while mothers were more disciplinary and task oriented. Therefore, fathers were expected to score higher on respect for autonomy/cognitive growth fostering and mothers were expected to score higher on quality of instruction. This idea should also lead to the child scoring higher on the enthusiasm for interaction with parent/responsiveness to parent scale when coded with fathers and scoring higher on the task orientation scale when coded with mothers. Finally, the warmth ratings of fathers and mothers were explored.

Method

Subjects

The subjects for the study were 30 father-infant dyads (19 boys, 11 girls) and 30 mother-infant dyads (19 boys, 11 girls) who were previously videotaped in Boulder, Colorado, for participation in the Twin Infant Project (TIP) discussed earlier (DiLalla et al., 1990). All 30 of the fathers who were videotaped with their 9-month-old twin were coded in this study. Only one twin per family was included in the study, with the particular twin being chosen at random. The mothers were then matched based on the sex of the infant, parental verbal IQ score (within 10 points), and parental grade/education level (within 3 years). These criteria matched each of the 30 father-codings except for one. This exception was matched within the 10 point range for father's verbal IQ score and the 3 year range of grade/education level of both parents, but could not be matched within the 10 point range for mother's verbal IQ score. For this particular match, the range of mother's verbal IQ score was lengthened to a 12 points range.

Procedure

The dyads were videotaped at home when the infants were 9 months of age. The parents were instructed to try to elicit vocalizations from the child during the two and a half minute segment. These segments were then coded (requiring 85% inter-rater reliability) using a global coding scheme developed by Bishop (1995).

Using the global coding scheme, the parents were coded on a 5-point scale for four behaviors: (1) sensitivity to cues from the child, where 1 represented no support and 5 represented skillful support; (2) respect for autonomy/cognitive growth fostering, where 1 represented intrusive and controlling behavior and 5 represented no intrusiveness; (3) quality of instruction, where 1 represented poor instruction and 5 represented high involvement, and; (4) warmth, where 1 represented high affection and 5 represented no affection. The children were coded on an additional four behaviors: (1) affection for

parent, where 1 represented the child not attempting to share the task experience with the parent and 5 represented a highly sharing relationshipbetween parent and child during the task; (2) task orientation, where 1 represented active avoidance of the task and 5 represented persistence; (3) enthusiasm for interaction with parent/responsiveness to parent, where 1 represented active avoidance of engagement with parent and 5 represented positive affect, vigor,and confidence and; (4) negativity, where 1 represented no signs of negativity and 5 represented an overtly hostile temperament. Refer to Appendixes A and B to obtain detailed information on the coding scheme (i.e., descriptions of codes, layout of coding sheet).

Results

The three hypotheses were tested separately. Means were computed for all variables by sex of parent (see Table 1) and by sex of child (see Table 2). One-tailed t-tests were performed to determine the results for hypotheses 1 and 2, while two-tailed t-tests were employed for hypothesis 3.

Hypothesis 1. It was first hypothesized that since the research shows fathers to be more playful in their interactions with their infants, fathers should score higher on the respect for autonomy/cognitive growth fostering scale and the child should score higher on the enthusiasm for interaction with parent/responsiveness to parent scale when coded with fathers. No significant difference was found on the respect for autonomy/cognitive growth fostering scale between fathers and mothers ($t(58)=.89$). Similarly, no significant difference was found on the enthusiasm for interaction with parent/responsiveness to parent scale ($t(58)=-1.68$, $p<.09$).

Hypothesis 2. It was further hypothesized that since mothers tend to be more disciplinary and task oriented in the interactions with their infants, they would score higher on the quality of instruction scale and their child should score higher on the task orientation scale when coded with their mothers. It was found that there was no significant difference on the quality of instruction scale, but there was a trend toward

significance with the mother showing a higher quality of instruction ($t(58)=-1.73$, $p<.09$). However, there was a significant difference on task orientation, where the infant scored much higher with mother than with father ($t(58)=-3.39$, $p<.001$).

A 2 (sex of parent) X 2 (sex of child) ANOVA was used to determine if there was a significant interaction on the Task Orientation variable. There were main effects for sex of parent ($F(1,59)=4.53$, $p<.05$) and for sex of child ($F(1,59)=10.20$, $p<.01$), but there was no significant interaction.

Hypothesis 3. Finally, the researcher wanted to look at the scale of warmth. There was no prediction as to who would score higher on this scale -- mothers or fathers. It was shown that, in fact, fathers scored higher on warmth than did mothers ($t(56.11)=3.99$, $p<.001$). A 2x2 Analysis of Variance was performed by sex of the child and sex of the parent (see Table 3). This showed that there was no difference in warmth by sex of the child and there was no significant interaction.

Discussion

This study attempted to show the differences between the ways in which fathers interact with their infants and the ways in which mothers interact with their infants. It was found that there was no significant differences between father's and mother's interactions with respect to autonomy/cognitive growth fostering by parent, enthusiasm for interaction with parent/responsiveness to parent, or quality of instruction by parent. However, there was a difference on the task orientation of the infant between mothers and fathers, with the infant showing higher orientation with mothers than with fathers.

Why is task orientation and warmth were the only significant results found? This could be due to a multitude of reasons. First of all, the rating scale used was global in nature, possibly rating more on quantity than on quality. Perhaps fathers are just as task oriented as mothers, but go about the task in a way that is more playful, and, therefore, does not fit into the coding description. The idea that mothers are more task oriented does, however, fit in with the previous literature. Parke and Bhavnagri (1989) found that

mothers are often in charge of family scheduling. Mothers often manage their children's activities, such as making doctor's appointments, running the children to soccer practice, or supervising activities with friends. It is usually the mother who acts in a teaching role, helping their children to do their schoolwork, arts and crafts, etc. (Power & Parke, 1982).

Additionally, the hypotheses were based on the idea that mothers are task oriented, while fathers are more playful. While there was a code for task orientation, there was not an actual "play" measure. The researcher picked scales that did not specifically measure play (i.e., respect for autonomy/cognitive growth fostering and enthusiasm for interaction with parent/responsiveness to parent). Perhaps if an actual play measure had been included, the results would have been significant, just as much of the past research has shown. For example, Sroufe, Cooper, & DeHart (1992) have shown that the father's domain is usually playful exchanges.

Some of the past literature may also give us an idea of why fathers scored higher than mothers on the scale of warmth. Belsky (1979) and Lamb (1977) report that mothers are more likely to hold their infants for caretaking purposes, while fathers hold the infants for play. In the coding scheme used, the scale of warmth was based mainly on touching and cuddling the infant. Since the mothers are touching is most often in the form of caretaking (i.e., fixing scrapes, holding the child when he/she is frightened, etc.), and there was really no need for these types of caretaking activities during the videotaped session, then their time on this measure would be diminished.

This leads us to one large limitation of this research: the coding scheme. Perhaps it would be better in future research to use a more micro-analytic coding scheme, such as the scheme used by DiLalla (1995). This scheme may help us to get at more minute details of play, task orientation, etc. Also, the families on tape knew that they were being videotaped, and videotaped for a total of only two and one half minutes. This may make their reactions on tape biased, therefore not allowing us to generalize our information to a natural sample of parents and infants. It may be better to use either natural settings or

longer videotaped segments to produce more accurate and realistic results. Last, but not least, the sample number was extremely small. The results would be more reliable with a larger sample.

It would be beneficial for future research to address these limitations. It will be useful to do the same study, using the microanalytic coding scheme, a larger sample, and longer videotaped segments. This would help to make the results more generalizable and possibly less biased. Then in the future, perhaps it will be possible to learn why mothers and fathers differ in these ways. Is it due to the social roles shown as children grow into adulthood? Or could there possibly be a genetic link, as is suggested by Lamb, Frodi, Hwang, Frodi, and Steinberg (1982) who noted that even fathers who are primary caregivers exhibit the same patterns as those who are secondary caregivers? These are all ideas that need to be explored in future research.

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Table 1. Descriptive statistics by sex of parent.

	Mother		Father	
Variable	Mean	S.D.	Mean	S.D.
Parent				
Autonomy	3.47	.94	3.67	.80
Quality	3.53	.97	3.07	1.11
Warmth	2.20	.85	3.17	1.02
Child				
Enthusiasm	2.93	1.14	2.00	.98
Task orientation[a]	3.33	.96	2.97	.72

[a] mothers and fathers differed significantly on this measure ($t(58)=-3.39$, $p<.001$)

Table 2. Descriptive statistics by sex of child.

	Female		Male	
Variable	Mean	S.D.	Mean	S.D.
Parent				
Autonomy	3.55	.80	3.58	.92
Quality	3.14	.99	3.39	1.10
Warmth	2.91	.92	2.55	1.11
Child				
Enthusiasm	2.45	.80	3.11	1.01
Task orientation	2.09	.92	2.68	1.23

Table 3. Analysis of variance -- sex of child by sex of parent

	d.f.	F	p
Main Effects	2	8.85	.00
Sex of Child	1	2.02	.16
Sex of Parent	1	15.68	.00
2-Way Interaction	1	.15	.70
Total	59		

Appendix A

Complete Coding Schemes (Bishop, 1995)

Mother Codes

A. Sensitivity to Cues from the Child

1) Parent fails to be supportive to the child. Parent fails to read child cues and has little orientation to the child's needs. He/she is non-responsive to anything positive or negative that the child does.

2) Parent gives minimal support to the child in that he/she only responds to the most overt, negative or positive cues from the child and then only irregularly (i.e., he/she might only respond to the same behavior once during the session and ignore it thereafter).

3) Parent gives some support, but it is sporadic and poorly timed. His/her support is still more contingent upon strong overt cues, but he/she might respond to the same behavior more than once.

4) Parent provides more than adequate support to his/her child. He/she reads and reacts to most sues from the child (positive or negative) in an appropriate manner.

5) Parent skillfully provides support throughout the session. He/she acknowledges and reinforces the child's successes. He/she reads verbal and behavioral cues from the child accurately and responds appropriately at all times.

B. Respect for Autonomy/Cognitive Growth Fostering

1) Parent is very intrusive and controlling. Parent makes developmentally overwhelming and frustrating demands on the infant. Parent physically prevents the child from doing what the child is attempting to do. He/she becomes verbally annoyed when the child will not perform the target task.

2) Parent is mostly intrusive and controlling. He/she rarely lets the child work on a task unimpeded. In most situations, the parent will physically intrude into the child's efforts in an attempt to direct the child's activities.

3) Parent is moderately intrusive. He/she may intrude abruptly into the child's efforts throughout the session, but these episodes are not very frequent or sustained.

4) Parent is minimally intrusive. For the most part, he/she allows the child to work with only infrequent, short-duration interruptions.

5) Parent never intrudes at all. This could be because he/she acknowledges the child's intentions, communicates trust in the child's abilities and individuality, and allows a mutually negotiated interaction OR because he/she is completely disengaged from the child.

C. Quality of Instruction

1) Parent's instructions are absent, ineffective, or of poor quality. The parent is uninvolved and fails to structure the task so the child knows what is required or gives cues that are of little help (i.e., no or almost no verbal attempts to get the child to vocalize).

2) Parent provides minimal structure and instruction. He/she gives vague or ineffectual cues as to the nature of the task (i.e., infrequent, short-duration verbal attempts to get the child to vocalize).

3) Parent provides adequate structure and instruction, most often in the form of lower level hints. Parent does not provide overall goal or instruction and she may appear off-task from time to time (i.e., talking to the camera, talking to others in the room).

4) Parent is actively involved in the task session and provides adequate cues and instruction. He/she wanders off task only rarely (frequent, sustained verbal attempts to get the child to vocalize).

5) Parent is highly involved, provides a good, clear overall explanation of the task at the start of the session (i.e., beginning verbal attempts from the start of the session and sustaining them through to the end). The mother acts to insure the child's success on the target task.

D. Warmth

1) Parent is highly affectionate throughout the task session. He/she engages in frequent, sustained episodes of touching and cuddling the child and/or engages in frequent, warm verbal behavior toward the child.

2) Parent is mostly affectionate and caring, with frequent, but not sustained, episodes of touching and cuddling of the child and/or warm verbal behavior toward the child.

3) Parent is moderately affectionate. Touching and cuddling behaviors and/or verbal behaviors occur, but only sporadically and for short periods of time.

4) Parent shows little affection, either physically or verbally, toward the child. Episodes of touching and cuddling the child are rare and, when occurring, are not sustained for any length of time.

5) Parent shows no affection for his/her child, either physically or verbally. He/she actively avoids contact and displays avoidance behaviors when the child attempts to make contact with him/her.

Child Codes

A. Affection for Parent

1) Child clearly does not attempt to share experience with the parent. Signs, such as failing to make eye contact or directing expressions of success to the observer

instead of the parent, and little evidence of mutual involvement are used as evidence of this scale point.

2) Child shows positive affect toward the parent rarely, and only for brief periods of time. This might involve some slight evidence of mutual involvement for a single episode or two, and only for short periods of time, but with no overall pattern sustained throughout.

3) Child shares some positive expressions with parent, but these are only minor elements of the interaction and are not sustained. Even if expressed repeatedly, there is no period of sustained shared positive affect by child toward parent.

4) The child shows positive affect toward the parent for the majority of the session. There is evidence of mutual involvement for most of the test session (i.e., responding to parent verbally) with only infrequent, non-sustained episodes of non-positive affective behavior.

5) The child demonstrates a positive, engaging, and sharing relationship with parent by showing affection, eye contact, or sharing positive feelings toward the parent for a sustained period of time. There is a sense of warmth and care in the interaction of the child with the parent.

B. Task Orientation

1) Child actively tries to avoid the task. Child ignores parent's requests, is constantly off-task and distracted, or is passive and rejecting of the parent's help.

2) Child is engaged on task only sporadically and then only for brief periods of time.

3) Child works at the task with some diligence, but efforts are mixed, and there are substantial periods of being off-task or passively avoidant and disinterested.

4) Child displays some off-task behavior, but for the most part is actively engaged in task behavior for extended periods of time.

5) Child is persistent throughout the session and displays very little off-task behavior.

C. Enthusiasm for Interaction with Parent/Responsiveness to Parent

1) Child demonstrates active avoidance of engaging in interaction with parent. Child responds negatively to all attempts by mother to engage child in task behaviors.

2) Child displays avoidance of engaging in interaction with parent, either actively or passively. However, this active avoidance is not as blatantly negative as the previous scale point would indicate. More often than not the child attempts to avoid interaction with parent.

3) Child shows some enthusiasm, but still seems hesitant or anxious at times in engaging in interaction with parent, or does so mechanically, without evidence of being interested. Child is affectively restrained.

4) Child is enthusiastic for the majority of the session and only rarely exhibits affective restraint. The child is, for the most part, interested in the tasks and is fairly positive about his/her performance.

5) Child shows a lot of positive affect, vigor, and confidence throughout the session. Child stays actively involved with parent throughout the test session and seems interested in interacting with parent.

D. Negativity

1) The child shows no signs of negativity or frustration throughout the session.

2) The child shows few signs of negativity, and, when shown, they are appropriate to the situation. Signs of anger or frustration are brief.

3) Child is negative when the situation dictates/warrants negative behavior (i.e., the child is hungry, needs to be changed, has hurt himself/herself) and this occurs during at least half of the test session.

4) The child is more frequently negative, showing dislike for the parent's cues, turning away from the parent, or making angry faces at the parent. The signs occur at times throughout the session but remain determined by the situation.

5) The child is overtly hostile to the parent, ignoring him/her or resisting his/her help. This is the predominant theme reflected in the child's behavior and occurs even in the absence of situational determinants.

Combination Code

A. Overall Interaction

1) Parent and child cooperate fully and enjoyably throughout duration of the test session. Both show evidence of mutual satisfaction with the interaction.

2) Parent and child cooperate for the most part during the majority of the test session. Occasionally, one or the other may "do their own thing," but these episodes are infrequent and not temporally sustained.

3) There is no apparent interaction occurring between parent and child during the entire test session. Parent does not respond to child's behavioral or verbal cues and child ignores parent's attempts to engage him/her in play or verbal behaviors.

4) Parent and child rarely cooperate during the test session. For the most part, either one or the other attempts to interact with the other but is met with indifference or the other person ignores them.

5) It is clear that one member of the dyad is trying to interact with the other and is being ignored throughout the test session. This would be apparent by one person (i.e., the parent) trying to engage in interactive behaviors and the other person ignoring them. This is sustained throughout the test session.

Appendix B

Coding Sheet (Bishop, 1995)

Tape ID#:_____ Age:_____ Coder:_____ Date:_____

Parent Codes

1) Sensitivity

1 2 3 4 5

2) Respect for Autonomy

1 2 3 4 5

3) Quality of Instruction

1 2 3 4 5

4) Warmth

1 2 3 4 5

Child Codes

1) Affection for Mother

1 2 3 4 5

2) Task Orientation

1 2 3 4 5

3) Enthusiasm/Positive Affect

1 2 3 4 5

4) Negativity

1 2 3 4 5

Combination Code

1) Interaction

1 2 3 4 5