MATERNAL EMPLOYMENT AS A PREDICTOR OF INFANT SOCIAL EXPERIENCE AND RESPONSIVENESS TO STRANGER

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Chapter I

Introduction

Today, more women with infants are in the labor force of the United States than ever before. This means that a large number of infants are constantly exposed to and cared for by one or more adults. In some cases, care is given by a relative; in other cases the caregiver may be a non-related person. The infant's first exposure to the caregiver (regardless of whether it is a relative) may be similar to encountering a stranger. How infants react to strangers has been deemed important by child development researchers and theorists, particularly if the affect manifested is of negative character. The significance of wariness to strangers has been upheld from various perspectives. It has been viewed as a developmental milestone (Schaffer, 1966), as a consequence of attachment (Benjamin, 1961) and finally as a developmental organizer (Sroufe, 1977). The present study was focused on the relationship between maternal work status and infants' reactions to a stranger.

Stranger anxiety is an emotional phenomenon that occurs in many infants during the second half of the first year of life. The range of reactions manifested may vary from wan-

ing of smiling, cessation of ongoing activities, tensing of muscles and gaze avoidance to outright crying or screaming. From time to time this has also been referred to in research literature as fear of strangers, warinesss of strangers or as a negative reaction to strangers.

Extensive research has been conducted to investigate stranger anxiety in infants. Recently, however, the topic has become a focus of controversy (Batter & Davidson, 1979). Researchers disagree as to exactly when the infant first manifests stranger anxiety and there is even less consensus among investigators as to the underlying factors that define the intensity of its expression. In a review of empirical literature on stranger anxiety in infants, Sroufe (1977) found only a small percentage of infants in a standard approach situation to show stranger wariness during the first half year of life. However, such expression became common by 8 or 9 months of age and showed an upward trend throughout the first year.

Besides age, other infant attributes have been studied in an effort to resolve issues about infant reactions to strangers. These include sex, temperament, cognitive level, maternal relationship and exposure to strangers and other caretakers (Batter & Davidson, 1979). Contextual variables such as home versus laboratory settings, mother proximity-distance, and the mother's presence or absence have been ex-

amined. Characteristics of the strangers such as sex, age, behavior and unfamiliarity and their relationships to stranger anxiety in infants have also been dealt with in the research. The overall pattern that emerges as a result of various findings suggests that fear of stranger is a multi-determined phenomenon (Schaffer, 1966).

Purpose of the Study

The purpose of the present study will be to examine difference between working and nonworking mothers in terms of (a) stranger anxiety exibited by infants of these two groups of mothers; (b) reported maternal infant interaction in a home situation and (c) difference in the amount of social exposure to which infants of working versus nonworking mothers were exposed.

Justification of the Study

Since more mothers of infants are in the working force today than ever before, there is much literature containing people's opinions about the effects of maternal employment. However, much less empirical literature exists on this topic. Hock (1980) pointed out the need of answering the following important questions: Do working and nonworking mothers behave differently with their infants? Do the infants of working mothers behave differently in social situations?

Attempts will be made to answer these questions in the proposed study. Also, the present study will examine such infant variables as age, sex and social exposure since these have been found in research literature to be important parameters affecting the way an infant reacts in a social situation in the presence of an unfamiliar person. No study was found that investigated the effect of these variables on the way infants of working and nonworking mothers respond to strangers. Maternal caregiving characteristics of working and nonworking mothers and their infants' social behavior was compared in only one study (Hock, 1980). In that study the infants' social characteristics were evaluated with respect to infants' relationships with their mothers and their interaction with strangers. Infants' responses to strangers were not dealt with specifically in Hock's study. The present study will examine stranger anxiety among infants of working and nonworking mothers.

Definition of Terms

Working Mother : A mother who reported working outside the home at the time of the study.

Nonworking Mother: A mother who reported not working outside the home at the time of the study.

Stranger Anxiety: Any negative behavior exibited by an infant toward a stranger, including frowning, pouting, wrin-

kling face, fussing, whimpering, crying, screaming, turning to mother, avoiding glance, pulling hand back and withdrawing.

Hypotheses

H1 Nonworking mothers spend significantly more time in interaction with their children on weekdays than do working mothers.

H2 Working mothers spend more time on weekends in interaction with their children than do nonworking mothers.

H3 Mothers of girls spend more time in interaction with their infants on weekdays, weekends than do mothers of boys.

H4 There is no significant interaction between sex of the child and mother's work status as they affect the amount of interaction on weekdays.

H5 There is no significant interaction between sex of the child and mother's work status as they affect the amount of interaction on weekends.

H6 The frequency of outing to public places is greater among children of working mothers than among children of nonworking mothers.

H7 Working mothers begin to take their children out at an earlier age to meet other adults than nonworking mothers.

H8 There will be a significant difference between the homes of working and nonworking mothers in terms of the number of times unfamiliar visitors are in the home each week.

H9 Working mothers perform fewer caregiving activities like feeding, playing, walking outdoors, talking, bathing, dressing and carrying children than do nonworking mothers.

H10 There will be a significant interaction between sex of the child and mother's work status as they affect the intensity of stranger anxiety expressed.

H11 There will be age level differences in the way infants in both the working and nonworking groups react to strangers.

H12 Infants of working mothers will react more negatively than do infants of nonworking mothers to the stranger when physical contact is involved.

H13 There will be an interaction effect of work status and age of the infant in response to the stranger in situations involving physical contact.

Chapter II

Review of Literature

Batter and Davidson (1979) reviewed the research on infants' wariness to strangers. They categorized the findings of previous empirical literature on this topic into studies of child attributes, stranger attributes and contextual variables. The present review will focus primarily on child attributes since the other areas are not relevant to the main purpose of this study. In addition, literature pertinent to the effect of mother's employment on infants' reactions to strangers or other related social behaviors will be reviewed. The two main areas to be reviewed here include the attributes of the child and attributes of the mother.

Attributes of the Child

Researchers have examined the effects of age, sex, social experience, temperament, cognitive level and heredity on infants' responses to strangers. In the following section the first three variables will be reviewed; the remaining three variables will not be considered here since these are not pertinent to the present study.

Age differences. The findings of a majority of the studies on age differences in infants' responses to strangers indicate that wariness becomes a common reaction to strangers by the second half of the first year of life. However, there is a lack of consensus among researchers as to the age of onset and frequency of its occurrence within a certain age.

In a longitudinal study, Tennes and Lampl (1964) found that 61 percent of their subjects experienced the onset of stranger anxiety at or near 5 months. Their sample consisted of 19 infants between the ages of 3 and 23 months. The stranger was sober, silent and staring while approaching the infant in the mother's arm. Specified as fear responses were sobering, turning or looking away, freezing, fussing and crying.

Another longitudinal study was conducted by Schaffer and Emerson (1964) using a larger sample of 60 infants and a more rigorous control of the variables involved in the approach of the stranger. In six predetermined steps beginning with silent visual contact and ending with picking up the infant, the stranger interacted with the infant. The behaviors evaluated were whimpering, crying, lip trembling, screwing up face, looking or turning away, drawing back, running or crawling away and hiding the face. Thus sobering or freezing were not included as indices of fear. The study

found that by 8 months of age 74% of the infants were wary of strangers. A similar result was reported by Emde, Gaensbauer and Harmon (1976). Fourteen infants between the ages of 4 to 12 months were approached by strangers in three phases: (a) silent approach, (b) greeting and (c) pickup and hold. The mean age of onset of negative reaction was found to be 8 months. Also 11 out of 14 babies showed stranger anxiety by 9 months.

Waters, Matas, and Sroufe (1975) used a response measure based on behaviorally derived ratings and a psychophysiological validation in their longitudinal-cross-sectional research. Infants were approached in a stepwise standard fashion both under mother-present and mother-absent conditions. The results indicated that half of the 10-month-olds were wary when the stranger contacted them in their mothers' presence. Bronson (1972) noticed similar reactions to an intrusive stranger in the mother-absent condition in half of his 6.5 and 9-month-old subjects.

Cross-sectional studies (Goulet, 1974; Greenberg, Hillman & Grice, 1973; Lewis & Brooks, 1974; Rand & Jennings, 1978; Skarin, 1977) have generally compared infants 5 months of age with those of 8 months of age or older. Two other cross-sectional studies (Campos, Emde, Gaensbauer & Henderson, 1975; and Morgan & Ricciuti, 1969) have included infants as young as 4 months in their samples. Scarr & Sala-

patek's (1970) study was done using a wide age range from 2 months to 23 months. Findings of these studies have typically indicated that infants of 8 months or older display more negative or less positive emotion to strangers. Only one cross-sectional study (Rheingold & Eckerman, 1973) found virtually no evidence of fearful reaction among any of their 8, 10 or 12 month-olds. Their atypical experimental procedure resembled a play interaction with the infant given ample time and opportunity to become friendly to the stranger.

The literature on age differences reveals age trends in infants' negative responses to strangers in standard stranger approach situations. Variation in the percentage of infants showing negative reaction at a particular age are explained by procedural variations (Sroufe, 1977). The present study will examine infants from 3 months to 12 months of age and their response to a stranger.

Sex differences. Research on sex differences in infants' responses to strangers has yielded some significant results. Schaffer (1966) found an earlier manifestation of stranger anxiety among the 18 girls than among the 18 boys of his sample. A similar finding was reported by Robson, Pederson, and Moss (1969). Girls also tend to exhibit negative reaction more frequently and more intensely than boys (Lewis & Brooks, 1974; Morgan & Ricciuti, 1969; Robson, Pederson & Moss, 1969; Tennes & Lampl, 1964). Significant sex differ-

ences in the same direction were reported by Goulet (1974) in his study of 16 boys and 16 girls. Goulet controlled the variable of sex by having four subjects of each sex in each of the following age levels: 32 weeks, 40 weeks, 48 weeks, and 56 weeks. In Goulet's study, the infant stranger encounter involved a series of eight stages beginning with the stranger entering the child's visual field, talking, playing peek-a-boo, approaching, making physical contact with the child and ending with the stranger picking up the child. The results indicated that when physical contact was initiated by the stranger, boys reacted more positively than girls. Also there were twice as many boys with positive reactions as they were with negative reactions. The girls, on the other hand, were distributed almost equally between the two categories.

Bronson (1970) found sex differences with respect to intensity of fear responses. In that study, responses to visual novelty as well as to the stranger were evaluated as a function of sensitivity, timidity and fear. A sample of 30 boys and 30 girls were observed from the age of 1 month to 8.5 years. His findings indicated the possibility that a stable predisposition to a particular level of fearfulness may be set in males but not in females by six months of age. Bronson suggested that quality of mothering may be an important determinant in male infants' greater intensity of fear later in life.

The research of Greenberg, Hillman & Grice (1973) pointed to another aspect of the role of sex in infant reaction to strangers. In their study, 12-month-old males were found to be more positive to female than to male strangers and these differences were found to be significant.

Studies have also examined the interaction of rearing condition and sex as it affects the infants' social interaction with strangers (Brookhart & Hock 1976; Hock & Clinger, 1980; Portnoy & Simmons, 1978). However, only one of these (Brookhart & Hock, 1976) reported significant findings. In that study, home-reared males and day-care females were found to exhibit more intense contact-maintaining and proximity-seeking behaviors directed to stranger than did the day care boys or the home reared girls. That study was comprised of 18 home reared infants divided equally betweeen sexes and 15 day care infants composed of six girls and nine boys. The small number of boys and girls in each rearing group makes it difficult to draw firm conclusions from the data.

The studies reviewed on sex differences indicate that proportionately more girls react negatively to strangers and with more intensity than do boys. The present study will explore the presence of sex differential responses to a stranger in infants of working and nonworking mothers.

Social experiences. Researchers have examined the effect of birth order on stranger anxiety. Collard (1968) matched 12 first borns with 12 later born infants and 6 widely spaced later borns with 6 less widely spaced later born subjects. The study reported that first born and widely spaced infants compared to later born showed a longer response latency to the stranger. They also made fewer exploratory and playful responses in the strangers' presence. The researcher proposed that infants who enjoyed little exposure to people are more fearful than those who receive stimulation from a variety of persons. Schaffer (1966) in his longitudinal study of 36 infants reported a different kind of correlation between birth order and stranger anxiety. Seventeen first borns had an earlier onset of stranger wariness compared to 19 later born infants.

In the same study, Schaffer (1966) examined other antecedent social interaction variables. These were: (a)number of children in the family, (b)the number of people contacted and (c)the number of caretakers of the infant. A significant relationship was found between number of siblings and stranger anxiety. Specifically, the more siblings a child had the later was the age at which the child showed fear of strangers. Contrary results have been reported by Morgan, Levin & Harmon (1975) who found no relation between wariness to stranger and either family size or the number of si-

blings. Schaffer found that infants who had been exposed to more people during a typical week experienced a later onset of stranger anxiety. Similar results have been reported by Morgan, Levin & Harmon (1975). Schaffer also found an inverse relationship between stranger anxiety and amount of earlier exposure to relatively unfamiliar persons who had physically interacted with the infant. However, findings from other studies (Bronson, 1972; Harmon, Morgan & Klein, 1977; Morgan & Ricciuti, 1969) did not support this result. As to the number of caretakers, Schaffer included not only those who took part in the routine care, but also those who actively interacted with the child. The study showed no evidence of any relationship between number of caretakers and stranger anxiety in infants.

Some researchers investigating home reared versus day care infants' responses to strangers detected no major overall effect (Ricciuti, 1974; Brookhart & Hock, 1976). Hock & Clinger (1980) examined the effect of group day care, individual care and exclusive maternal care on infant reaction to stranger. Sixty 12-month-olds were tested on the Stranger Situation Behavior Instrument developed by Ainsworth & Witting (1969). This instrument consists of a series of eight standardized steps. In episodes one and two, the infant is introduced to a strange environment. He is introduced to the stranger in episode three and this is followed

by the absence of mother in episode four. Reunion with mother and departure of stranger takes place in episode five with the mother departing again in episode six. This is followed by the entry of the stranger in episode seven and finally reunion with the mother once again in episode eight. Infants' interactions with the stranger were analyzed in terms of five behavioral categories: contact-maintaining, proximity-seeking, contact-resisting, proximity-avoiding and search behavior. A significant rearing group by episode interaction was found regarding contact resistance to the stranger. Group care infants showed little contact resistance to the stranger in any episode. Home-reared infants linearly increased in their level of contact resistance from episode three (when the infant was introduced to the stranger) onwards. Individual care infants increased their level of contact resistance from episode three to episode four (mother-absent condition). However, it decreased from episode four onwards.

Conflicting evidence regarding the effect of prior social experience on infants' responses to strangers makes it impossible to draw a general conclusion. In the present study infants' exposure to different social experiences resulting from mothers' employment status was assessed. Difference in the infants' reaction to stranger was expected to be related to the differential social experience of infants of working and nonworking mothers.

Maternal Attributes: Work Status

Maternal attributes that have been studied in stranger anxiety research include maternal availability, maternal responsiveness, maternal interaction, maternal stimulation (visual, auditory, tactile) and such dimensions of maternal caregiving behavior as sensitivity, acceptance, cooperation and accessibility. However, the maternal employment status, as it relates to other maternal caregiving characteristics has been investigated in only one study (Hock, 1980). In a longitudinal study, Hock compared the social behavior of infants of working mothers with those of infants of nonworking mothers. Of the 97 subjects from which the data were derived, 42 had working mothers and 55 had nonworking mothers. Working mothers were those who held regular employment outside the home throughout the infant's first year beginning at 3 months of age. Nonworking mothers did not hold any outside job in the infant's first year of life. Only children of working mothers who were individually cared for in a home setting were tested. Maternal attributes were measured through the following: (a) ratings based on an interview, (b) observation-based ratings of maternal care, (c) time-sampled feeding behavior frequencies and (d) a self-administered maternal attitude scale. Infants' reaction to a stranger and to the mother were observed and scored in accordance with the Strange Situation Behavior Instrument de-

veloped by Ainsworth and Wittig (1969). Assessments were made at 0, 3, 8 and 12 months of age. The study did not report any difference between working and nonworking mothers in terms of sensitive mothering at 3 and at 8 months of intant's age. Working mothers who expressed a positive interest in the maternal role at birth had infants who strongly avoided the stranger. They were also less likely to maintain maternal contact or proximity during the initial episode of the strange situation observations. Another important finding was that the infants of working mothers less often resisted the stranger than did infants of nonworking group. Hock explains this in the light of the experiential history of infants in the working group. It seems experience in nonmaternal care teaches them to seek comfort from an unfamiliar person.

The literature on mother's work status reveals that differences exist in the way infants in the working and nonworking group react to stranger. In general, infants of working mothers are less likely to react negatively to strangers.

Chapter III

Methodolgy

Subjects

Subjects for this study consisted of 76 infants. Their age ranged from 3 to 12 months. Table 1 shows the number of infants of each sex at each age included in the study. The subjects were white, middle class infants living in a university community and its vicinity. Both working mothers (n=25) and nonworking mothers (n=51) were included in the study. The data from additional subjects were discarded because of incomplete data (n=25). Subjects were recruited from birth announcements in local newspapers. Parents were contacted by a letter (Appendix A) which stated the nature of the study and the extent of the children's involvement in it. If the mother expresssed willingness to participate by returning an enclosed card, a laboratory visit was scheduled by telephone call and confirmed by letter (Appendix A).

TABLE 1

Number of Subjects of Each Age and Sex

Age	Males	Females	Total
3 months	3	1	4
4 months	10	6	16
5 months	4	4	8
6 months	2	6	8
7 months	3	5	8
8 months	5	6	11
9 months	1	3	4
10 months	8	3	11
11 months	1	4	5
12 months	1	0	1
Totals	38	38	76

Procedure

Two adjacent observation rooms of a university building served as the experimental room and the observation room. They were connected by a one-way mirror. Infants were videotaped via a camera placed behind the one way glass. A microphone in the experimental room allowed auditory transmission from the experimental to the observation room so that it could be recorded on the videotape. The observation session was conducted on the model outlined by Morgan and Ricciuti (1969). In accordance with this procedure during the observation sessions the mother sat in a chair in front of the one way mirror. About a meter from her, a strolee car seat was placed in which the child was secured. The seat was adjusted to the slightly reclined position so as to be appropriate for infants of all ages. Since the mother was seated to the side but slightly forward, the infant could see her without difficulty. The seat was elevated so that the infant would be on eye level with the stranger.

With one or two exceptions in which a substitute was used, one individual served as the stranger in the laboratory approach situation. Both strangers had light brown hair, brown eyes and were approximately 5'6" in height. In order to reduce the effect of diversity, both strangers wore a pink smock, no glasses and no jewelry.

The laboratory visits were scheduled at such time that the infants were likely to be well-rested and not hungry. On arrival at the testing session, mother and child were taken to the experimental room. During the testing session the mother was asked to fill out a temperament form which focused on her infant's overall and daily temperament characteristics (Appendix B). Since this study was concerned only with the infant's background information and not with their temperament, no further mention of the latter will be made. Mothers were instructed to remain a passive observer throughout the experiment and not to respond to the child's cues unless the child should become distressed.

The Goulet-Decarie modification (1974) of the infant-stranger prototype developed by Morgan and Riccutti (1969) was used in this study. It consisted of a series of eight structured steps administered in a standard order. The stranger executes the following steps:

1. appears in the child's visual field, silent and smiling,
2. talks,
3. plays "peek-a-boo",
4. approaches, and
5. talks in a friendly voice from a close range,
6. touches the child's hand,
7. gently strokes the child's face and head, and

8. offers to pick up and finally picks up the child.

See Appendix C for a detailed description of this instrument.

Data Collection and Coding

Data collected for each infant in this study included a background form, a temperament rating and observation of each infant's reaction to a stranger. A background information form was completed by the mother prior to the laboratory visit. She was instructed to bring the form with her to the observation session. Contained on this form was such information as birth data and physical information, amount of time spent with parents and previous experience with strangers. This information was coded and checked and subsequently punched onto IBM computer cards. See appendix D for coding instructions.

The coding guideline developed by Solomon and Decarie was used for scoring the infants reaction to the stranger (See Table 2). Infants' responses to the stranger were measured on two criteria: (a) the quality of affect - Positive, Negative or Undeclared (the lack of overt affect); and (b) the intensity of affect which ranged from Positive 3 (+3) through Undeclared or Undifferentiated (0) to Negative 3 (-3). In categorizing the infant's behavior as Positive, Negative or Undeclared, a classification system based on the

work of Morgan and Ricciuti (1969) were used in which each infant's action was examined on the following basis: facial expressions, vocalizations and motor activity (body attitude and movement).

Two coders independently viewed each video tape and rated the response at 15 second intervals. See Appendix D for a copy of the code sheet. When only positive actions or only negative actions or undeclared actions were seen within one interval, it was scored either as positive/negative/undeclared. In instances where both positive and undeclared actions were observed within the same interval it was scored positive. However, when both positive and negative actions were present within one interval, the interval was scored mixed affect (0).

Graduate and undergraduate students in child development served as observers of the infants' reactions to strangers. The students practiced coding pilot session videotapes using the Solomon and De Carie (1976) coding system. Training continued until they reached a 95% agreement criterion. In all, three sets (of two each) of observers participated in the coding process. Pearson Product Moment Correlations were computed to show the correlations between the observation coded by each set of observers (Table 3).

TABLE 2

Method Used for Determining the Affect Intensity Scores

1. Positive Scores

+1 If the interval contained no more than one positive action.
For example; a single smile
+2 If the interval contained two or more positive actions.
For example; a smile and a vocalization
+2 If the interval contained one continuing positive action.
For example; a constant smile
+2 If the interval contained two or more positive actions directed solely towards an object belonging to E.
For example; playing with and smiling at E's microphone.
+3 If the interval contained very enthusiastic, spontaneous, or reactive friendly interactions with E.
For example; participating in a game with E, accompanied by broad smiles and chuckles.

2. Undeclared and Undifferentiated Scores

0 If the interval contained U-scored actions only.
0 If the interval contained M-scored actions only.
0 If the interval contained both U and M scored actions.

3. Negative Scores

-1 If the interval contained one negative action.
For example; a withdrawing of the hand.
-2 If the interval contained two or more negative actions.
For example; a whimper and a cry face.
-3 If the interval contained a very negative reaction.
For example; screaming and/or crying.

Note.- From "Fear of Strangers: A Developmental Milestone or an Over-studied Phenomenon?" by R. Solomon and T. G. Decarie, Canadian Journal of Behavioral Science, 1976, 8 (4),355.

TABLE 3

Pearson Product Moment Correlations of Two Coders for Each Step of the Stranger Approach Situation

Steps	Coefficient	Significance
1	r = .896	p < .001
2	r = .959	p < .001
3	r = .956	p < .001
4	r = .923	p < .001
5	r = .815	p < .001
6	r = .835	p < .001
7	r = .813	p < .001
8	r = .860	p < .001

Note.- N = 75

Chapter IV

Results and Discussion

The purpose of this study was to examine the difference between working and nonworking mothers in terms of mother infant interaction, social experience of their infants and their responsiveness to strangers. The measures consisted of a questionnaire and a laboratory observation. The questionnaire was designed to assess quantitative dimensions of mother infant interaction and previous social experiences of infants. The structured laboratory observation focused on infant's reaction to an approaching stranger. This chapter presents the analyses of data collected. The Statistical Package for the Social Sciences (SPSS), (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975) was used for all analysis. The results and discussion are organized under three broad groups: Mother infant interaction, social experiences of infants and infant reactions to a stranger.

Mother Infant Interaction

The hypotheses related to maternal work status and mother infant interaction on weekdays were as follows:

H1 Non working mothers spend significantly more time in interaction with their children on weekdays than do working mothers.

H3 Mothers of girls spend more time in interaction with their infants on weekdays than do mothers of boys.

H4 There will be no significant interaction between sex of the child and mother's work status as they affect the amount of interaction on weekdays.

Percentages of interaction time that working and nonworking mothers in this study spent with their infants on weekdays were calculated (Table 4). A two-way analysis of variance tested for the effects of work status (working versus nonworking), sex of the infant and the interaction between the two on time mothers spend in interaction with their infants on weekdays. Results indicated no significant main effects or interactions. The F values were 3.39 ($p < .08$) for work status and .19 for sex of the infant (nonsignificant). The effect of work status approached significance for nonworking mothers on weekdays. This is not a surprising result since nonworking mothers have more time available for interaction on weekdays.

In regard to mother's work status and mother infant interaction on weekends the following hypotheses were tested:

H2 Working mothers spend more time on weekends in interaction with their children than do nonworking mothers.

H3 Mothers of girls spend more time in interaction with their infants on weekends than do mothers of boys.

H5 There is no significant interaction between sex of the child and mother's work status as they affect the amount of interaction on weekends.

Percentage of interaction time on weekends with children as reported by working and nonworking mothers were calculated (Table 5). A two-way analysis of variance was performed with the mother's response to the amount of time they spend in interaction with their infant on weekends as the dependent variable and work status (working or nonworking) and sex of the infant as independent variables. No significant main effects or interactions were found. The F values were 2.07 (nonsignificant) for work status and .004 (nonsignificant) for sex of the infant. The mean hours spent in mother infant interaction was higher for working (3.52 hours) than for nonworking mothers (3.22 hours). It is possible that working mothers make an extra effort on weekends to interact with their children as a way of compensating for hours that cannot be spent together on weekdays.

TABLE 4

Percentage of Mothers Reporting Various Amounts of Interaction Time on Weekdays

Work Status	Amount of time			
	1-2 hrs	3-4 hrs	5-6 hrs	>6 hrs
Working:				
Males	0.0	10.5	10.5	7.9
Females	5.4	13.5	8.1	10.8
Nonworking				
Males	5.3	13.2	26.3	26.3
Females	0.0	10.8	21.6	29.7

Note.- N = 75

Another aspect of the mother infant interaction was considered in the following hypothesis:

HA9 Working mothers perform fewer caregiving activities such as feeding, playing, walking outdoors, talking, bathing, dressing and carrying children than do non-working mothers.

A one-tailed t-test tested for difference in the mean number of times working and nonworking mothers performed caregiving tasks daily with their infant. No significant result emerged from the analysis ($t = 0.86$, $df = 73$, nonsignificant). Nonworking mothers (27.72 times per day) performed more caregiving activities with infants than did working mothers (26.48 times per day). At first glance this seems to lend support to the original hypothesis that non-working mothers compared to working mothers have greater time available to carry out these activities with their children. However, the difference between the means is so small that it must be pointed out that working mothers were doing only slightly fewer caregiving activities with their infants on a daily basis even though there was less time available for such activities.

TABLE 5

Percentage of Mothers Reporting Various Amounts of Interaction Time on Weekends

	Amount of Time			
Work Status	1-2 hrs	3-4 hrs	5-6 hrs	>6 hrs
Working				
Males	0.0	0.0	13.2	15.8
Females	0.0	5.6	8.3	25.0
Nonworking				
Males	5.3	7.9	23.7	34.2
Females	0.0	16.7	13.9	30.6

Note.- N = 74

Social Experience

Hypotheses relating to social experience concerned the frequency of first outings, age of outings and the number of unfamiliar visitors in the home, all of which could expose the infant to strangers. The first hypothesis was:

H6 The frequency of outing to public places will be greater among children of working mothers than among children of nonworking mothers.

A one-tailed t-test revealed no significant difference in the number of times per week working and nonworking mothers took their children to public places ($t = 1.30$, $df = 67$, nonsignificant). The mean for the working group (8.43 outings per week) was slightly lower than for the nonworking group (9.78). This is in contrast to the hypothesis. It is not surprising that nonworking mothers take their children out since there is more time available to nonworking mothers for such activity. What is more surprising is that nonworking mothers do not do this more often. In stating the originial hypothesis, the writer speculated that working mothers were less likely to be playing a stereotypical role of "mother at home" and would seek out more opportunities for involvement outside the home for her infant as well as for herself. However, in stating the original hypothesis, the writer failed to take into account the limited time available to working mothers for outings. Thus, in a sense, the

fact that there was little difference in the number of outings by these groups, despite the fact that nonworking mothers had more available time, indicated an effort by working mothers to provide outings in the limited time available. Thus, although the hypothesis was not statistically supported, a very loose interpretation indicates some trend toward support of the hypothesis.

The second hypothesis under social experience was as follows:

H7 Working mothers begin to take their children out at an earlier age to meet other adults than will nonworking mothers.

A one-tailed t-test was used to test the effect of mother's work status on the age of first outings with the infant. The result did not indicate any significant difference ($t = -0.53$, df 72 nonsignificant) Percentage calculations indicated (Table 6) that most mothers in both groups began outings at two to four weeks. A slightly larger percentage of nonworking mothers took their infants out at one week or younger. This is in contrast to the original hypothesis.

The remaining hypothesis relating to social experience was as follows:

H8 There will be a significant difference between the homes of working and nonworking mothes in terms of the number of times visitors are in the home.

TABLE 6

Percentage of Infants of Working and Nonworking Mothers Who Were Taken Out at Various Ages

	Age of Outing			
Work Status	2-6 days	1 week	2-4 weeks	>4 weeks
Working	16.0	20.0	48.0	16.0
Nonworking	20.4	26.5	34.7	18.4

Note.- N = 74

The percentage of working and nonworking mothers who reported various numbers of unfamiliar visitors in the home each week is shown in Table 7.

A Chi square comparison of the number of unfamiliar visitors in the homes of these two groups yielded a Chi Square of 5.93 (nonsignificant). Thus, there was no indication that either group had more unfamiliar strangers in the home. The lack of differences between the two groups is evident in the frequencies shown in Table 7. For both working and nonworking mothers the most frequently reported number of visits was 1 per week. Only a small percentage in either group reported more than three visits by strangers each week.

TABLE 7

Percentage of Mothers in Each Group Reporting Various Numbers of Unfamiliar Visitors in the Home Per Week

	Number of Times						
Work Status	0	1	2	3	4	5	6
Working	16.0	44.0	16.0	12.0	4.0	0.0	8.0
Nonworking	13.7	54.9	19.6	5.9	0.0	3.9	2.0

Note.- N = 76

Reaction to Stranger

The hypotheses relating to stranger anxiety were as follows:

H10 There will be a significant interaction between sex of the child and mother's work status as they affect the intensity of stranger anxiety expressed.

H11 There will be age level differences in the way infants in both the working and nonworking groups react to strangers.

H12 Infants of working mothers will react more negatively than infants of nonworking mothers to the mother when physical contact is involved.

H13 There will be an interaction between work status and age of the infant in response to the stranger in situations involving physical contact.

Means and standard deviations of infant responses to the stranger for each of the eight steps were calculated (Table 8). The possible range of scores was from -3 to +3. A zero indicated a neutral response. Examination of the mean responses shown in Table 8 indicated that the overall responses were in the positive direction except for step 8. However, the means were very close to neutral in all steps. As the data indicates, most infants who were fairly positive before the stranger touched them (steps one through five) became less positive as the stranger stroked their face and head

TABLE 8

Means and Standard Deviations of Infant Responses to Stranger for Each Step

Stranger Actions	Means	SD
1: Enters	.645	.901
2: Talks	.370	1.053
3: Plays "peek-a-boo"	.625	1.152
4: Approaches	.347	.887
5: Talks from a close range	.521	.925
6: Touches child's hand	.316	1.039
7: Strokes child's face and head	.014	1.156
8: Offers to pick up and finally picks up	-0.007	1.190

and became slightly negative in step eight when the stranger picked up the infant. This result supports a number of research findings (Skarin 1977; Waters, Matas & Sroufe 1975) which indicate that positive reactions are prominent when stranger is at a distance but changes to very negative reaction when the stranger picks up or handles the infant. To test hypotheses related to the infants' total response to the stranger, each subject's scores for each step were summed to obtain the stranger anxiety score. Since the scoring ranged from -3 to +3 and since there were eight steps, the potential range of scores was from -24 to +24. However, the obtained mean stranger anxiety score for all subjects combined was 2.90 which is in the direction of positive affect but which is very close to neutral.

A two-way analysis of variance was computed to determine the effects of maternal work status, sex of the infant and the interaction of these two factors on the total response for the eight steps in the stranger encounter situation. Results indicated no significant main effects. The F values were .51 (nonsignificant) for work status and .06 (nonsignificant) for sex of the infant. See Table 9 for cell means. The effect of sex approached significance indicating a trend that males were more positive to the stranger than were females. This is in agreement with Tennes and Lampl (1964) study in which girls had a higher mean on stranger anxiety measures than did boys.

TABLE 9

Reactions of Infants to Stranger by Work Status and Sex of Infant

Work Status	$\bar{X}$
Working	
Males	2.56
Females	1.68
Nonworking	
Males	3.29
Females	3.15

Note.- N = 68

Data on age level difference were subjected to a two-way analysis of variance. The influence of age of infant, maternal work status and the interaction of these two factors on the total response of the eight steps of the stranger infant interaction were examined. No significant main effect emerged. The F values were 1.20 (nonsignificant) for age and .66 for work status (nonsignificant). The interaction effect of ages by work status approached significance ($F = 2.52$, $P < .09$). Figure 1 shows the mean reaction to the stranger by each group at each age. Findings indicated that the youngest infants (3-5 months) of the working group reacted somewhat more negatively to the stranger than did the older infants (10-12 months). This pattern is in contrast with several studies in which stranger anxiety have been found to emerge in the second half of the first year of life (Bronson 1972; Goulet 1974; Schaffer & Emerson 1964; and Rand & Jennings, 1978). It is possible that at the younger age their reaction to the stranger was a function of the differing social experience brought about as a result of mother working. The large difference in the mean reaction to the stranger among the two groups of 10-12 month old infants was indicative of the possiblity that because of the mother's work status infants in the working group had a late onset of stranger anxiety.

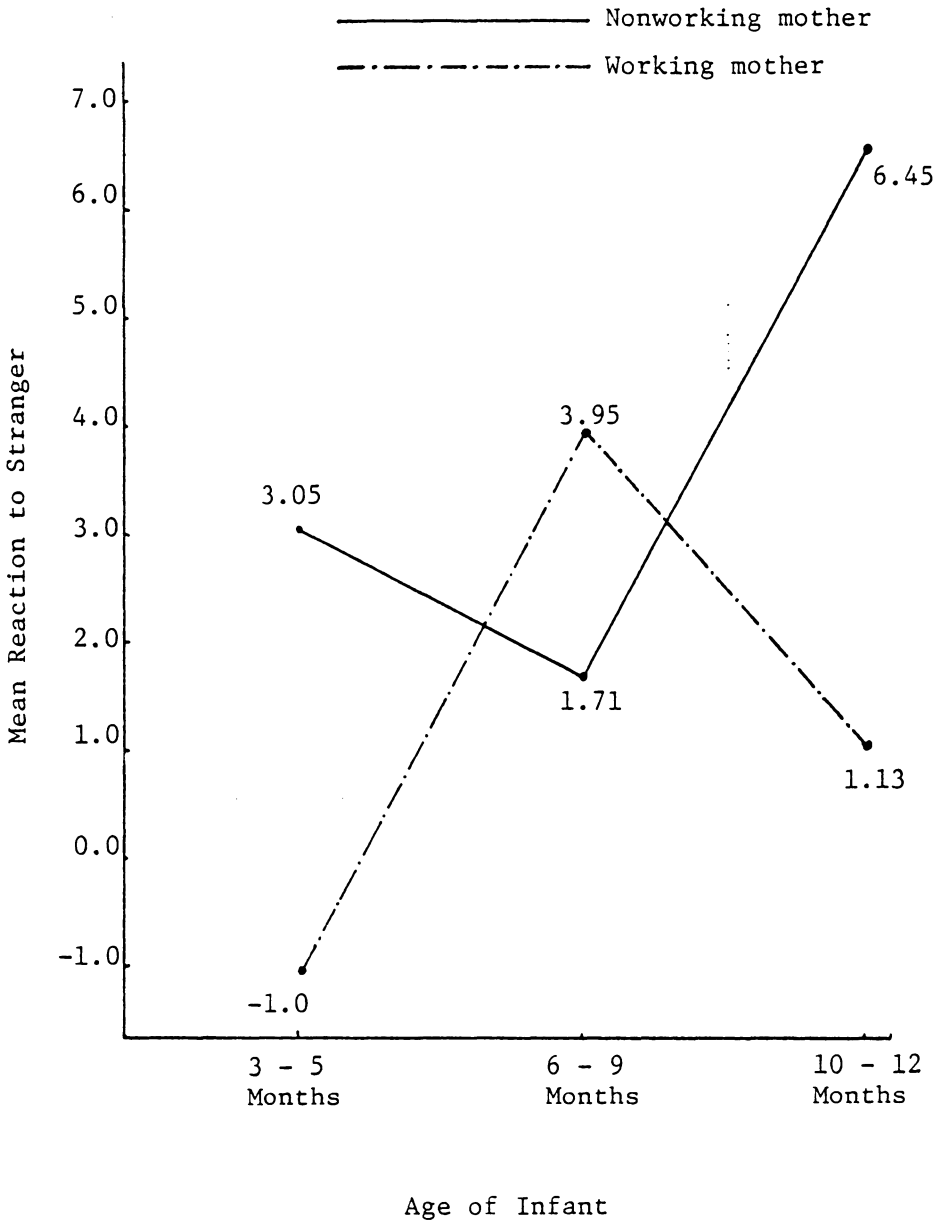

Figure 1. Mean Reaction to Stranger by Infant's age and Mother's Work Status

In order to study the effect of work status and age of the infant on the reaction to a stranger when physical contact is involved, a score was computed by adding together the responses for steps six through eight in the stranger situation. In these steps, the stranger touches child's hand (step 6), strokes child's face and head (step 7), and picks up child (step 8).

The mean response to physical contact by the stranger was .57 for all subjects combined. The potential scores ranged from -9 to +9. Thus the mean response was nearly neutral but slightly positive.

A two-way analysis of variance (reaction to touch by age by work status) yielded a significant interaction between age and work status ($F = 3.32$, $p < .05$). Figure 2 shows the mean reaction by each group at each age. Infants of working mothers reacted less positively to the stranger's touch than did infants in the nonworking group at 3-5 months and at 10-12 months. At 6-9 months of age infants of working mothers reacted more positively to touch by the stranger. Very negative reactions (-1.36) were recorded for the 3-5 month old infants of the working group and a slightly positive reaction (.84) was recorded for the infants in the nonworking group. One possible explanation that can be advanced is that infants at this age were reacting mainly from a learning theory perspective. Fear of the stranger is from this

viewpoint merely a reflection of learned attitudes carried over from previous disturbing encounters. Since the cognitive

ability to generate hypotheses about impending maternal separation is not thought to be available until about 12 months it appears that the "learning" interpretation put forth by Bronson (1978)provides a plausible explanation. Bronson argues that the quality of the baby's accrued evaluations of previous experiences with unfamiliar adults is an important determinant of future encounters with unfamiliar adults. However, he assumes that such exposure becomes frequent only during the second half of the first year and not before that time. It is plausible that infants of working mothers are exposed earlier and to sometimes distressing social encounters especially when unfamiliar adults behave unpredictably in making physical contact with the infant. This could contribute to the the discrepancy in scores obtained by the two groups (working and nonworking) of 3-5 month olds. In the 6-9 month age group, infants of working mothers reacted positively to the stranger's touch, whereas infants of nonworking mothers reacted negatively. In the 10-12 month age group, infants in the working group were once again less positive in their repsonses than were infants of nonworking mothers. To provide a rational explanation of this interaction is very difficult. It may be that

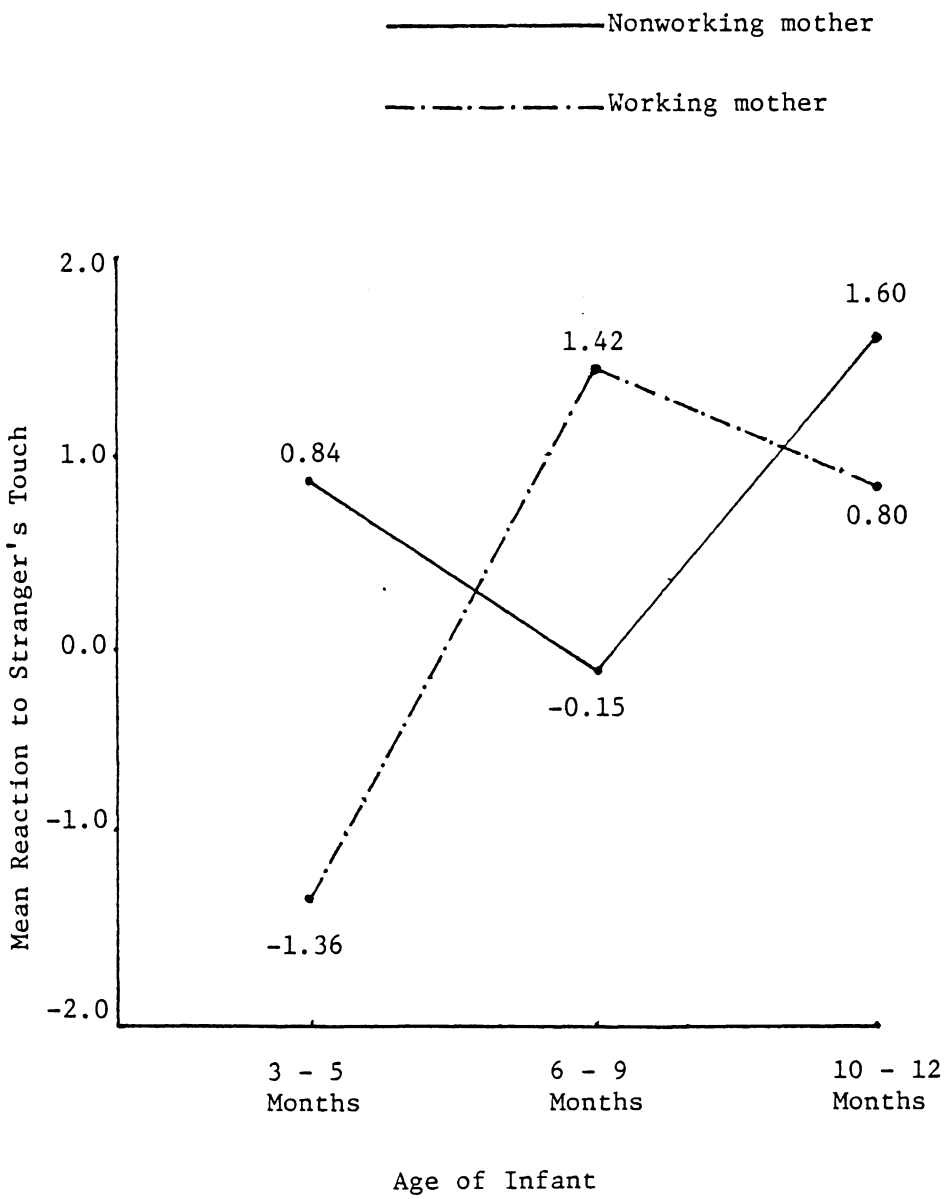

Figure 2. Mean Reaction to Stranger's Touch by Infant's Age and Mother's Work Status

whereas younger infants are reacting from a "learning" perspective, the older infants are reacting more cognitively. In this case, the delay of stranger anxiety in children of working mothers such as noted by Hock (1980) may be contributing to the results. However, the true explanation may be much more complex than could be definitively explained with the present sample size. Nevertheless, the significant interaction effect seems sufficient to point up the complexity of the factors influencing infants' reactions to strangers.

Chapter V

Summary, Conclusions, and Recommendations

The present study was conducted to examine the effect of maternal employment on the amount of time spent in mother infant interaction, social experiences of infants and the infants' reactions to a stranger. A questionnaire and a structured laboratory observation comprised the sources of data. The total number of subjects was 76 with 51 infants of nonworking mothers and 25 infants with working mothers. There were 38 males and 38 females and the infants ranged in age from 3 to 12 months.

Summary

Results of the data analysis indicated that there was no significant difference between the infants of working and nonworking mothers in terms of mother infant interaction on weekends or weekdays. However, two trends were apparent. Nonworking mothers spent slightly more time in interaction with their infants on weekdays whereas the mean interaction time of working mothers was slightly higher than that of nonworking mothers on weekends. No significant sex differnces were found in the amount of interaction either on

weekdays or weekends. Another aspect of mother infant interaction was the total number of caregiving activities that working and nonworking mother performed with their children. No significant differences emerged between the two groups even though nonworking mothers have more available time in which to perform caregiving activities.

The number of unfamiliar visitors reported in the homes of working and nonworking mothers did not differ significantly. There was also no evidence from the data analysis that working mothers took their children out at an earlier age to meet other adults than did nonworking mothers. No significant difference was found between working and nonworking mothers in the frequency of outings to public places.

Infants of nonworking mothers were more positive to a stranger than were infants of working mothers, although this result was not statistically significant. A pattern of more positive response emerged for male infants of both groups (working and nonworking) when compared to female infants. Age level differences in the reaction to a stranger were apparent though not significant. Infants in the three to five month age group whose mothers were working were somewhat negative to the stranger with a mean of -1.00 on a scale from -24 to +24. Ten to twelve month old infants of the nonworking group recorded a more positive score ($\bar{X}$ = 6.45 on a sca-

le from -24 to +24). Infants of working mothers reacted more negatively to the stranger when physical contact was involved than did infants of nonworking mothers and this result was statistically significant. A negative reaction was found among 3-5 month old infants of working mothers and among 6-9 month old infants of the nonworking group.

Conclusions

As presented in the summary above, maternal work status was found to be an important parameter in infant reactions to a stranger primarily when physical contact is involved. In this case, the maternal work status was in interaction with the age of the infant. The fact that age of the infant was not a significant main effect was in contrast with a number of previous studies. Since the number of subjects per cell was limited in this study it is difficult to draw definitive conclusions.

However, the results of this study do seem sufficient to call into question some of the previously held notions about differential social experiences of infants of working and nonworking mothers. For example, the amount of time spent in interaction with infants was about the same for both working and nonworking groups. Also both groups of mothers behaved similarly in terms of the age at which they took

their infants out to public places. The two groups had approximately the same number of unfamiliar visitors in the home each week. Likewise both groups provided nearly the same number of caregiving activities to their infants each day. Because of the similarities of the two groups in caregiving, mother infant interaction and exposure to unfamiliar persons, it cannot be assumed that either group provide their infants with a preventive antidote to stranger anxiety.

The significant interaction between the age of the infant and mother work status points to a need to study the underlying meaning of this particular variable to the infant's interpretation of and reaction to physical contact by an unfamiliar adult.

Limitations and Recommendations for Future Research

Sampling and measurement problems in the present study lead to the following recommendations:

1. Expand the sample size to include an equal number of infants from the working and nonworking group. The present study had a sample size of 76. A breakdown revealed 51 nonworking mothers and 25 working mothers. When data was further divided into three age groups, the number of cases per cell was not adequate for definitive results.

2. Include subjects from a wider socioeconomic range. In this respect one limitation of this study was that the subjects belonged almost totally to a white, middle class university community.
3. Some questions in the questionnaire used to measure mother infant interaction and infant social experience were worded in such a way that data were reduced to the ordinal level, thus weakening the power of statistical tests used. Some questions relied on a great amount of recall on the part of the mother. Some respondents had difficulty answering them precisely. If, in future research questionnaires are to be presented, care should be taken to avoid these limitations.
4. It would have been helpful for the present study if a baseline of reaction to a familiar person could have been obtained and future studies should consider this.

Substantive concerns that could not be addressed with the present data base lead to the following recommendations for future research:

1. Studies which assess the amount of time per week a mother works and its consequences on infant reactions to strangers.

2. Studies which assess the proportion of time working and nonworking women spent in interaction with their infant and its effect on infants responsiveness to strangers.

References

Ainsworth, M. and Wittig, B. Attachment and exploratory behavior of one-year-olds in a strange situation. In B. Foss (Ed). Determinants of Infant Behaviour (Vol. 4). London: Methuen, 1969.

Batter, B. S. and Davidson, C. V. Wariness of strangers: reality or artifact? Journal of Child Psychology and Psychiatry and Allied Disciplines, 1979, 20 (2), 93-109.

Benjamin, J. D. Some developmental observations relating to the theory of anxiety. American Psychoanalytic Association Journal, 1961, 9, 652-608.

Bronson, G. W. Fear of visual novelty: developmental patterns in males and females. Developmental Psychology, 1970, 2, 33-40.

Bronson, G. W. Infants' reactions to unfamiliar persons and novel objects. Monographs of the Society for Research in Child Development, 1972, 37 (3), 1-46.

Bronson, G. W. Aversive reactions to strangers: A dual process interpretation. Child Development, 1978, 49, 495-499.

Brookhart, J and Hock, E. The effects of experimental context and experiential background on infants' behavior toward their mothers and a stranger. Child Development, 1976, 47, 333-340.

Campos, J., Emde, R., Gaensbauer, T., and Henderson, C. Cardiac and behavioral interrelationships in the reactions of infants to strangers. Developmental Psychology, 1975, 11, 589-601.

Collard, R. R. Social and play responses of first-born and later-born infants in an unfamiliar situation. Child Development, 1968, 39, 325-334.

Goulet, J. The Infant's conception of causality and his reactions to strangers. In T. G. Decarie (Ed.), The Infants Reaction to Strangers. New York: International Universities Press, Inc. 1974.

Greenberg, D. J., Hillman, D. and Grice, D. Infant and stranger variables related to stranger anxiety in the first year of life. Developmental Psychology, 1973, 9 (2), 207-212.

Harmon, R. J., Morgan, G. A. and Klein, R. P. Determinants of normal variation in infants' negative reactions to unfamiliar adults. Journal of American Academy of child Psychiatry, 1977, 16, 670-683.

Hock, E. Working and nonworking mothers and their infants: A comparative study of maternal caregiving characteristics and infant social behavior. Merrill-Palmer Quarterly, 1980, 26 (2), 79-101.

Hock, E. and Clinger, J. B. Behavior toward mother and stranger of infants who have experienced day care, individual care, or exclusive maternal care. The Journal of Genetic Psychology, 1980, 137, 49-61.

Lewis, M. and Brooks, J. Self, other, and fear: infants' reactions to people. In M. Lewis and L. A. Rosenblum (Eds), The Origins of Fear, New York: John Wiley, 1974.

Morgan, G. A., Levin, B. and Harmon, R. J. Determinants of individual differences in infants' reactions to unfamiliar adults. JSAS Catalog of Selected Documents in Psychology 1975, 5:277 (Ms no 1006).

Morgan, G. A. and Ricciuti, H. N. Infants' responses to strangers during the first year. In B. M. Foss (Ed), Determinants of Infant Behaviour. London: Methuen, 1969.

Nie, N. H., Hull, C. H., Jenkins, J. G., Steinbrenner, K., and Bent, D. H. SPSS: Statistical package for the social sciences (2nd ed.). New York, N. Y.: McGraw-Hill, Inc., 1975.

Portnoy, F. C. and Simmons, C. H. Day care and attachment. Child Development, 1978, 49, 239-242.

Rand, C. S. and Jennings, K. D. Reactions of infants and young children to a stranger in an unfamiliar setting. Journal of Genetic Psychology, 1978, 132 (2), 197-209.

Rheingold, H. L. and Eckerman, C. O. Fear of the stranger: a critical examination. In H. W. Reese (Ed). Advances in Child Development and Behavior. (Vol 8), New York: Academic Press, 1973.

Ricciuti, H. N. Fear and the development of social attachments in the first year of life. In M. Lewis and L. A. Rosenblum (Eds), The Origins of Fear. New York: John Wiley, 1974.

Robson, K. S., Pederson, F. A. and Moss, H. A. Developmental observations of diadic gazing in relation to the fear of the strangers and social approach behavior. Child Development, 1969, 40, 619-627.

Scarr, S. and Salapatek, P. Patterns of fear development during infancy. Merrill-Palmer Quarterly, 1970, 16, 53-90.

Schaffer, H. R. The onset of fear of strangers and the incongruity hypothesis. Journal of Child Psychology and Psychiatry, 1966, 7, 95-106.

Schaffer, H. R. and Emerson, P. E. The Development of social attachments in infancy. Monographs of the Society for Research in Child Development, 1964, 29, Whole No 3.

Skarin, K. Cognitive and contextual determinants of stranger fear in six- and eleven-month-old infants. Child Development, 1977, 48, 537-544.

Solomon, R. and Decarie, T. G. Fear of stranger and separation anxiety in infancy. Canadian Journal of Behavioral Science, 1976, 48 (4), 355.

Sroufe, L. A. Wariness of strangers and the study of infant Development. Child Development, 1977, 48, 731-746.

Tennes, K. H. and Lampl, E. E. Stranger and separation anxiety in infancy. Journal of Nervous and Mental Disease, 1964, 139, 247-254.

Waters, E., Matas, L., and Sroufe, L. A. Infants' reactions to an approaching stranger: description, validation, and functional significance of wariness. Child Development, 1975, 46, 348-356.

Appendix A

Letters to Parents

We are interested in participating in the infant-stranger project.

Parent's Name:

Address:

Phone No.:

Infant's Name: Birth Date:

Age: Sex:

COLLEGE OF HOME ECONOMICS

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DEPARTMENT OF MANAGEMENT, HOUSING AND FAMILY DEVELOPMENT (703) 961-6163

Dear Mr. and Mrs.

We are beginning a research project at VPI which is designed to assess infant reactions to strangers. We are seeking the help of parents who have infants between the ages of 3 and 11 months. The mother and the baby will be participating in the project. The father is welcomed to come along and observe if desired.

The project will require 1 thirty-minute visit to our center filling out a questionnaire and completing a short checklist. Your infant will not be subjected to any stressful situations. You, the mother, will be present at all times.

We hope that you will consider participating in this study. For the protection of privacy all information gathered on any individual child is held confidentially. However, overall results of the study will be available upon request.

Please return the enclosed card if the mother is willing to participate or desire more information about the project. You will be contacted by one of our staff members.

Sincerely,

Victoria R. Fu, Ph.D.
Child Development

Cosby S. Rogers
Child Development

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Enclosure

COLLEGE OF HOME ECONOMICS

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DEPARTMENT OF MANAGEMENT, HOUSING AND FAMILY DEVELOPMENT (703) 961-6163

Dear

Thank you for agreeing to participate in the project on infant reactions to strangers. This is to confirm that you and your baby will visit the Center for Family Services, VPI & SU at 126 Jackson Street, N.W. in downtown Blacksburg on
at a.m.

Enclosed is a questionnaire for you to complete before coming for the first visit. Again, we would like to stress that all information gathered on your child will be held strictly confidential and that if the child becomes stressed, the situation will be terminated.

Enclosed is a map indicating where the Center for Family Services is located. You may park in the areas indicated on the map.

Thank you for your cooperation.

Sincerely,

Victoria R. Fu, Ph.D
Child Development

Cosby S. Rogers, Ph.D
Child Development

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Enclosures

Appendix B

Background and Temperament Forms

Date_____Time_____Baby's name_____

1. Please identify the number of:
   a. Full-term live births 0 1 2 3 4 5 6
   b. Premature births 0 1 2 3 4 5 6
   c. Miscarriages 0 1 2 3 4 5 6

2. During your pregnancy were there any medical problems?
   Yes_____ No_____

   If so, which of these occurred?
   _____Rapid weight gain
   _____Edema (swelling)
   _____Convulsions
   _____Visual disturbances
   _____Toxemia
   _____Heartburn
   _____Nausea
   _____Headache
   _____Emotional problems
   _____Spotting with blood
   _____Medication needed
   _____Other (please specify)_____
   _____

3. Please check the type of delivery used.
   _____Prepared childbirth, no medication
   _____Prepared childbirth, mild medication
   _____Spinal
   _____Total anesthesia
   _____Cesarean

4. Approximately how much time did you spend with your infant immediately following delivery?
   _____Less than 5 minutes
   _____5-15 minutes
   _____More than 15 minutes
   _____No time

5. Do you regularly work, attend classes or other activities outside your home?
   _____Yes _____No

   If so, please check the number of days per week you are away from home.
   _____1 _____2 _____3 _____4 _____5 _____6 _____7

   Please check the number of hours per day you are away from home.
   _____1-2 hrs. _____3-4 hrs. _____5-6 hrs. _____7-8 hrs. _____More than 9

6. Did you work during your pregnancy? _____Yes _____No
   If so, how long?
   _____First trimester
   _____Second trimester
   _____Third trimester
   _____Full term

7. How much stress or anxiety was associated with your work?
   _____Excessive amount
   _____Some amount
   _____Little amount
   _____Almost none
   _____None

8. If working, what was the age of your infant when you returned to work?
____1 wk. ____2-4 wk. ____2-3 mo. ____4-5 mo. ____6-12 mo.
____2-3 yrs. ____More than 4 yrs.
Did you resume your previous work schedule?
_____Yes _____No

9. Who cares for your child while you are at work?
_____Relative
_____Friend
_____Child care center staff
How long has your child been with this person(s)?
___1-4 wks. ___5-8 wks. ___3-6 mo. ___7-12 mo. ___More than 1 year
How many other children are kept in this situation with your child?
___1 ___2-3 ___4-5 ___6-7 ___8-9 ___More than 9

10. How do you make an exit when leaving your child with another person?
_____Leave while child is asleep
_____Leave while child is unaware of you leaving
_____Leave while child is fully aware of you leaving, no conversation with child
_____Leave while child is fully aware of you leaving, speak to child first
Please check the reactions your child has when you leave him/her with someone.

_____Cries	_____Refuses to do anything (eat or play)
_____Frowns	_____Goes on with normal activities
_____Pouts	_____Clings to you
_____Whines	_____Follows you to door
_____Looks for you	

11. How do you react to leaving your child with another person?

_____Very apprehensive	_____Not very apprehensive
_____Somewhat apprehensive	_____Not at all apprehensive

12. What age did you begin taking your child out where he/she would meet other adults?
____2-6 days ____1 wk. ____2-4 wk. ____Older than 4 wks.

13. Please circle the number of times you take your child to these places each week.

Grocery store	0	1	2	3	4	5	6	7	8
Shopping	0	1	2	3	4	5	6	7	8
Home of friends	0	1	2	3	4	5	6	7	8
Day care center	0	1	2	3	4	5	6	7	8
Church nursery	0	1	2	3	4	5	6	7	8
Church service	0	1	2	3	4	5	6	7	8
Club meeting	0	1	2	3	4	5	6	7	8
Neighborhood strolls	0	1	2	3	4	5	6	7	8

14. How many times a week do unfamiliar visitors come to your home?
____0 ____1 ____2 ____3 ____4 ____5 ____6 or more

15. How much time on a one-to-one basis do you spend with your baby on week days while he/she is awake?
____1-2 hrs. ____3-4 hrs. ____5-6 hrs. ____More than 6 hrs.

16. How much time on a one-to-one basis do you spend with your baby on weekends?
____1-2 hrs. ____3-4 hrs. ____5-6 hrs. ____More than 6 hrs.

17. How often do you do these things with your child each day?

_____Feeding	0	1	2	3	4	5	6	7	8
_____Playing with specific toys	0	1	2	3	4	5	6	7	8
_____Walking outside	0	1	2	3	4	5	6	7	8
_____Talking to child	0	1	2	3	4	5	6	7	8
_____Bathing child	0	1	2	3	4	5	6	7	8
_____Dressing child	0	1	2	3	4	5	6	7	8
_____Carrying child	0	1	2	3	4	5	6	7	8

18. How much does your child like to be cuddled?
_____Very much _____Little
_____Much _____Very little
_____Average _____None

19. How does your child react to being picked up by each of the following people?

Mother

Very Positive	Positive	Neutral	Negative	Very Negative	Not Applicable
/	/	/	/	/	/

Father

Very Positive	Positive	Neutral	Negative	Very Negative	Not Applicable
/	/	/	/	/	/

Family friends

Very Positive	Positive	Neutral	Negative	Very Negative	Not Applicable
/	/	/	/	/	/

Other relatives

Very Positive	Positive	Neutral	Negative	Very Negative	Not Applicable
/	/	/	/	/	/

Strangers

Very Positive	Positive	Neutral	Negative	Very Negative	Not Applicable
/	/	/	/	/	/

20. How many times has your child been frightened by a stranger?
____0-1 ____2-3 ____4-5 ____6-7 ____8-9 ____More than 9

21. How do you react to strangers approaching your baby in your home?

22. How do you react to strangers approaching your baby in a public place?

Date_____Time_____Baby's Name_____

Answer the following questions as they pertain to your baby's mood last night and this morning. Check the appropriate responses.

1. Last night, my baby went to sleep . . . . . .
   a. about the same time as usual (within ½ hour)_____
   b. earlier than usual_____
   c. later than usual_____
   d. has no regular time_____

2. Number of times baby woke during the night
   a. woke as usual_____
   b. woke more often than usual_____
   c. woke less often than usual_____
   d. waking varies nightly_____

3. What time did your baby wake up this morning?
   a. time_____
   b. same time as usual_____
   c. earlier than usual_____
   d. later than usual_____

4. What was your baby's general mood at waking?
   a. happy_____
   b. fussy_____
   c. placid_____
   d. energetic_____

5. Time of feedings
   a. time of last feeding _____
   b. time of next feeding _____

6. Did baby accept food readily?
   a. same as usual_____
   b. more than usual_____
   c. less than usual_____
   d. baby's acceptance of food varies daily_____

7. Bowel movements
   a. regular_____
   b. constipated_____
   c. diarrhea_____

8. What was the mood of other family members this morning?

9. Check the following if present last night or this morning.

   -runny nose_____
   -fever_____
   -vomitting_____
   -gas- stomach cramping_____
   -diaper rash_____
   -teething_____
   -cutting teeth _____
   -allergies_____
   -colic_____
   -extremely frequent urination_____

10. Is your baby presently taking medication?_____
    If so, how does he react to taking medicine?_____
    How does it affect his mood?_____
    How does it affect his behavior?_____

11. Rate your baby on the following behaviors for last night and this morning:

	Excessively	more than usual	average	less	absent
play readily	/	/	/	/	/
crying	/	/	/	/	/
smiling	/	/	/	/	/
frowning	/	/	/	/	/
vocalizing	/	/	/	/	/
activity	/	/	/	/	/

12. How did your baby react during his trip in the car this morning?
    -slept_____
    -cried_____
    -vocalized_____
    -looked around actively_____
    -placid_____
    -trembled_____
    -excited_____

13. How long was your baby in the car?_____

14. Does baby's mood change after riding in the car? _____Yes _____No

    If yes, how?_____

    _____

15. Has baby been around other unfamiliar adults today? _____Yes _____No

    If yes, when?_____

    Where?_____How long?_____

    Type of reaction?_____.

16. Has baby been frightened by anything or anyone this morning?_____

17. How would you classify your baby's mood today?
    -cheerful_____
    -gloomy_____
    -placid_____
    -irritable_____.

18. How can you tell what kind of day your baby is going to have by his mood in the morning?

    Changes in the following effect my baby's mood:
    -sleep_____
    -feeding_____
    -activity_____
    -experiences_____
    -illness_____
    -other_____

19. Any other comments you would like to make regarding your baby's mood today._____

    _____

    _____

Appendix C

Experimental Setting and Steps in Stranger Approach

For the present study the Goulet and Decarie modification of procedures developed by Morgan and Riccuiti(1969) were used. The setting and steps were as follows:

The mother is seated about a meter from the child's high-chair, to the side but slightly forward so that the subject can see without difficulty. Throughout the entire phase, which includes eight successive steps for a total elapsed time of four or five minutes, the mother remain present and in the child's visual field, but silent and about a meter away from him. Each step lasts thirty seconds, except step five, which lasts only ten to fifteen seconds, and step eight, which may continue beyond the half minute.

Step 1: The examiner comes into the child's visual field, approaching to within about two meters; he remains there silent and smiling, without other activity.

Step 2: During the second step,the examiner, maintaining the same distance, begins to talk softly to the child in a pleasant tone of voice.

Step 3: The examiner plays "peek-a-boo" with the child several times over, hiding his face with his hands and then suddenly uncovering it with a "peek-a-boo".

Step 4: In the fourth step, somewhat shorter than the others, the examiner slowly approaches the child, continuing to smile but without speaking.

Step 5: Right in front of the child, but slightly off-center so as not to hide the mother, the stranger again begins to talk softly to the child in a friendly voice.

Step 6: Then he makes physical contact with the child, lightly touching his hands while continuing to talk to him.

Step 7: Next, with one hand still touching that of the child and continuing to talk, the examiner gently strokes the child's face and head. This lasts for thirty seconds unless the child refuses contact and tries to avoid the examiner, in which case one proceeds directly to the final step.

Step 8: In the last step, the examiner holds out his hands to the child in an invitation to come, and, finally, picks the child up, except in the case of clear-cut refusal.

Appendix D

Coding Sheets

Column = Code 1 Background Information
Cols. 2-4 = Subject No.
Col. 5 = Sex . 1 = Male 2 = Female

Date_____Time_____Baby's name_____

Cols. 6-9 Age by month, e.g. 0125 (1 month, 1 wk)
1050 (1 month, 2 wk) (1175 (1 month, 3 wk)

1. Please identify the number of:

Col.10	a. Full-term live births	0	1	2	3	4	5	6	
11	b. Premature births	0	1	2	3	4	5	6	code is circled
12	c. Miscarriages	0	1	2	3	4	5	6	0 = N/A/no resp.

2. During your pregnancy were there any medical problems?
Col. 13 Yes_____ No_____

If so, which of these occurred?

Col. 14	1 Rapid weight gain	Col 20	1 Nausea
15	1 Edema (swelling)	21	1 Headache
16	1 Convulsions	22	1 Emotional problems
17	1 Visual disturbances	23	1 Spotting with blood
18	1 Toxemia	24	1 Medication needed
19	1 Heartburn	25	1 Other (please specify)_____

0 = N/A/no response _____

Col. 26 3. Please check the type of delivery used.
1 Prepared childbirth, no medication
2 Prepared childbirth, mild medication
3 Spinal
4 Total anesthesia
5 Cesarean
0 = N/A/no resp.

Col. 27 4. Approximately how much time did you spend with your infant immediately following delivery?
1 Less than 5 minutes 3 More than 15 minutes
2 5-15 minutes 4 No time
0 = N/A/No response

Col. 28 5. Do you regularly work, attend classes or other activities outside your home?
1 Yes 2 No 0 = N/A/no response

Col 29 If so, please check the number of days per week you are away from home.
1 1 2 2 3 3 4 4 5 5 6 6 7 7 0 = N/A no resp

Col. 30 Please check the number of hours per day you are away from home.
1 1-2 hrs. 2 3-4 hrs. 3 5-6 hrs. 4 7-8 hrs. 5 More than 9 0 = N/A no resp

Col. 31 6. Did you work during your pregnancy? 1 Yes 2 No 0 = N/A No resp.
32 If so, how long?
1 First trimester
2 Second trimester
3 Third trimester
4 Full term

Col. 33 7. How much stress or anxiety was associated with your work?
1 Excessive amount 4 Almost none
2 Some amount 5 None
3 Little amount 0 = N/A/No resp.

Col. 34 8. If working, what was the age of your infant when you returned to work?
__1__ 1 wk. __2__ 2-4 wk. __3__ 2-3 mo. __4__ 4-5 mo. __5__ 6-12 mo.
__6__ 2-3 yrs. __7__ More than 4 yrs. 0 = N/A/no resp.

Col. 35 Did you resume your previous work schedule?
__1__ Yes __2__ No 0 = N/A/No resp.

Col. 36 9. Who cares for your child while you are at work?
__1__ Relative 4 = other
__2__ Friend 0 = N/A/No resp.
__3__ Child care center staff

Col. 37 How long has your child been with this person(s)?
__1__ 1-4 wks. __2__ 5-8 wks. __3__ 3-6 mo. __4__ 7-12 mo. __5__ More than 1 year

Col. 38 How many other children are kept in this situation with your child?
__1__ 1 __2__ 2-3 __3__ 4-5 __4__ 6-7 __5__ 8-9 __6__ More than 9 7 = none 0 = N/A/ no resp.

Col. 39 10. How do you make an exit when leaving your child with another person?
__1__ Leave while child is asleep
__2__ Leave while child is unaware of you leaving
__3__ Leave while child is fully aware of you leaving, no conversation with child
__4__ Leave while child is fully aware of you leaving, speak to child first

Please check the reactions your child has when you leave him/her with someone.

Col. 40	__1__ Cries	Col. 45	__1__ Refuses to do anything (eat or play)
41	__1__ Frowns	46	__1__ Goes on with normal activities
42	__1__ Pouts	47	__1__ Clings to you
43	__1__ Whines	48	__1__ Follows you to door
44	__1__ Looks for you		0 = N/A/No. Resp.

Col. 49 11. How do you react to leaving your child with another person?
__1__ Very apprehensive __3__ Not very apprehensive
__2__ Somewhat apprehensive __4__ Not at all apprehensive
0 = N/A/No, resp.

12. What age did you begin taking your child out where he/she would meet other adults?
Col 50 __1__ 2-6 days __2__ 1 wk. __3__ 2-4 wk. __4__ Older than 4 wks. 0 = N/A/No resp

13. Please circle the number of times you take your child to these places each week.

Col. 51	Grocery store	0	1	2	3	4	5	6	7	8	
52	Shopping	0	1	2	3	4	5	6	7	8	
53	Home of friends	0	1	2	3	4	5	6	7	8	
54	Day care center	0	1	2	3	4	5	6	7	8	Code is circled
55	Church nursery	0	1	2	3	4	5	6	7	8	
56	Church service	0	1	2	3	4	5	6	7	8	
57	Club meeting	0	1	2	3	4	5	6	7	8	
58	Neighborhood strolls	0	1	2	3	4	5	6	7	8	

14. How many times a week do unfamiliar visitors come to your home?
Col. 59 __0__ 0 __1__ 1 __2__ 2 __3__ 3 __4__ 4 __5__ 5 __6__ 6 or more 7 = N/A/No resp

15. How much time on a one-to-one basis do you spend with your baby on week days while he/she is awake?
Col 60 __1__ 1-2 hrs. __2__ 3-4 hrs. __3__ 5-6 hrs. __4__ More than 6 hrs. 0 = N/A/ no resp.

16. How much time on a one-to-one basis do you spend with your baby on weekends?

Col. 61 ___1___ 1-2 hrs. ___2___ 3-4 hrs. ___3___ 5-6 hrs. ___4___ More than 6 hrs. 0 = N/A/ no resp.

17. How often do you do these things with your child each day?

Col 62	_____ Feeding	0	1	2	3	4	5	6	7	8
63	_____ Playing with specific toys	0	1	2	3	4	5	6	7	8
64	_____ Walking outside	0	1	2	3	4	5	6	7	8
65	_____ Talking to child	0	1	2	3	4	5	6	7	8
66	_____ Bathing child	0	1	2	3	4	5	6	7	8
67	_____ Dressing child	0	1	2	3	4	5	6	7	8
68	_____ Carrying child	0	1	2	3	4	5	6	7	8

code is circled

18. How much does your child like to be cuddled?

Col. 69
___1___ Very much ___4___ Little
___2___ Much ___5___ Very little
___3___ Average ___6___ None
0 = N/A/No resp.

19. How does your child react to being picked up by each of the following people?

Mother

Col. 70

Very Positive		Positive		Neutral		Negative		Very Negative	Not Applicable
/	/	/	/	/	/	/	/	/	/
5		4		3		2		1	0

Father

Col. 71

Very Positive		Positive		Neutral		Negative		Very Negative	Not Applicable
/	/	/	/	/	/	/	/	/	/
5		4		3		2		1	0

Family friends

Col. 72

Very Positive		Positive		Neutral		Negative		Very Negative	Not Applicable
/	/	/	/	/	/	/	/	/	/
5		4		3		2		1	0

Other relatives

Col. 73

Very Positive		Positive		Neutral		Negative		Very Negative	Not Applicable
/	/	/	/	/	/	/	/	/	/
5		4		3		2		1	0

Strangers

Col. 74

Very Positive		Positive		Neutral		Negative		Very Negative	Not Applicable
/	/	/	/	/	/	/	/	/	/
5		4		3		2		1	0

20. How many times has your child been frightened by a stranger?

Col 75 ___1___ 0-1 ___2___ 2-3 ___3___ 4-5 ___4___ 6-7 ___5___ 8-9 ___6___ More than 9 0 = N/A/ no resp.

21. How do you react to strangers approaching your baby in your home?

22. How do you react to strangers approaching your baby in a public place?

Subject #_____ Code Sheet 1981

Vist # ____1 ____2

Age (mo.) ___4 ___5 ___6 ___7 ___8 ___9 ___10 ___11 ___12

Sex ____Male ____Female

Coder's Initials_____

Step 1: Stranger enters, silent (30 seconds)

	Beg. Time		Code
1st	____	____	____
2nd	____	____	____

Step 2: Stranger talks (30 seconds)

	Beg. Time		Code
1st	____	____	____
2nd	____	____	____

Step 3: Peek-a-boo (30 seconds)

	Beg. Time		Code
1st	____	____	____
2nd	____	____	____

Step 4: Stranger Approaches, silent (10 seconds)

	Beg. Time		Code
1st	____	____	____
Skip			
2nd	____	____	____

Step 5: Stranger Talks (15 seconds)

	Beg. Time		Code
1st	____	____	____
Skip			
2nd	____	____	____

Step 6: Stranger touches infant (30 seconds)

	Beg. Time		Code
1st	____	____	____
2nd	____	____	____

Step 7: Stranger strokes face & head (30 seconds)

	Beg. Time		Code
1st	____	____	____
2nd	____	____	____

Step 8: Stranger picks baby up (30 seconds)

	Beg. Time		Code
1st	____	____	____
2nd	____	____	____
Skip			
3rd	____	____	____
Skip			
4th	____	____	____
Skip			
5th	____	____	____
Skip			
6th	____	____	____
Skip			
7th	____	____	____
Skip			
8th	____	____	____

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MATERNAL EMPLOYMENT AS A PREDICTOR OF INFANT SOCIAL EXPERIENCE AND RESPONSIVENESS TO STRANGER

by

Yasmin Rahman

(ABSTRACT)

The purpose of this study was to examine the difference between working and nonworking mothers in terms of mother infant interaction social experience of their infants and infants' responsiveness to stranger. The total number of subjects was 76 with 51 infants of nonworking mothers and 25 infants with working mothers. There were 38 males and 38 females and the infants ranged in age from 3 to 12 months.

The measures consisted of a questionnaire and a laboratory observation. The questionnaire was designed to assess quantitative dimensions of mother infant interaction and previous social experiences of infants. The structured laboratory observation focused on infant's reaction to an approaching stranger.

Infants in the working and nonworking group did not differ in the amount of mother infant interaction time either on weekdays or weekends. Both groups were similar in terms of the age at which the infants were first taken on outings to public places, the frequency of outings and the number of unfamiliar visitors in the home. Likewise both groups of mothers did not differ in the number of caregiving activities performed with their infant.

A significant interaction was found between maternal work status and age of the infant. However, neither age of the infant nor materanl work status emerged as significant main effects. The significant interaction between the age of the infant and mother work status needs to be more thoroughly investigated to determine the variations in reaction at monthly intervals.