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## The Relationship between Infant Temperament and Maternal Stress Level in Day Care and Home Care Children

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THE RELATIONSHIP BETWEEN INFANT TEMPERAMENT  
AND MATERNAL STRESS LEVEL  
IN DAY CARE AND HOME CARE CHILDREN

by  
Mario B. Natta

A Thesis Submitted to the Faculty of the Graduate School  
of Loyola University Chicago in Partial Fulfillment  
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1991

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## VITA

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## CHAPTER I

### INTRODUCTION TO THE RESEARCH PROBLEM

Maternal employment outside the home can no longer be considered exceptional or non-traditional. This trend has steadily progressed over the past few decades, with the rate of increase particularly high for families with infants and preschool-age children. In 1960, only 19% of mother's with children under 6 years were employed, by 1970 this proportion had increased to 34.5% of mothers with children under the age of 3 (Barnett & Baruch, 1978). In contrast, by 1987, 71% of mothers with school age children were employed outside the home (Hoffman, 1989), and 53% of mothers with a child under 1 year of age were employed (U.S. Bureau of Labor Statistics, 1987). Indeed, it has been estimated (Howes, 1987) that soon nearly all infants and toddlers will attend some type of child care. This revolutionary development has forced the child development community to re-examine the role of alternative caregivers and the impact of maternal-infant separation on the parent and child.

Accompanying the increase in the use of non-maternal child care is a concern about the potential effects of maternal employment on children's development. Historically,

the work of Spitz (1946) and Bowlby (1969) sensitized the public to the possible adverse effects of extended separations of mother and infant. These findings have fueled arguments for the maintenance of "traditional" family role organization (Easterbrooks & Goldberg, 1985). The empirical literature to date addressing the direct effects of maternal employment and alternate care on mother's and infants is far from conclusive. Comprehensive research efforts have focused on emotional development, social development, and intellectual development (McCartney & Galanopoulos, 1988). Concerns about negative consequences of day care have primarily focused on the risk of children developing maladaptive attachment relationships (Belsky & Rovine, 1988; McCartney & Galanopoulos, 1988; McCartney & Phillips, 1988). However, reviewers have disagreed strongly in their conclusions. A number of researchers have posited that extensive non-maternal, and especially nonparental, care begun prior to the first birthday, for samples studied in the United States, is associated with patterns of attachment that are usually regarded as evidence of insecurity (e.g. in assessment of infant behavior displayed on reunion with and following separation from their parents infants evidenced more resistance and avoidance of the parent [usually mother], higher anxiety, less proximity seeking toward the parent) (Belsky & Rovine, 1988; Barglow et al, 1987; Gamble & Zigler, 1986; Brazelton, 1986; Schwartz, 1983; Vaughn et al, 1980).

others have maintained that psychological studies have documented that nonparental child care does not disrupt the mother-child relationship (McCartney & Phillips, 1988; McCartney & Galanopoulos, 1988; Ainslie & Anderson, 1984; Farran, Burchinal, Huttaff, & Ramey, 1984). These reviewers have also cited anthropological research to demonstrate that shared child-rearing is the norm in non-industrialized societies, and has not been shown to have deleterious effects on mother-infant relationships.

One of the major criticisms aimed at studies offering findings of maladaptive relationships concerns assessment. The primary tool used in this research is the Strange Situation (Ainsworth & Wittig, 1969; Ainsworth, Blehar, Waters, & Wall, 1978). The validity of this measure for use with day-care children has been criticized, in that separation and reunion (the criteria upon which attachment status is determined in the procedure) may not be equally stressful events for children in day care and children in full time maternal care (Clarke-Stewart & Fein, 1983). More important, several developmental theorists have posited that individual differences in infant temperament are confounded with performance in the Strange Situation. In other words, it may be that particular inborn characteristics of the infant may be more responsible for behavior in the Strange Situation than day care status. (Campos, Barret, Lamb, Goldstein, & Sternberg, 1983; Kagan, 1982). Although this validity issue

might not on its face appear to have much impact on the interpretation of day care data, it does become significant if one were to posit that a child's temperament might have an impact on parental decisions to place or not place a child in a day care setting. Furthermore, others have asserted that various family background variables such as single parent status, high stress, use of unstable child care arrangements (Vaughn, Gove, & Egeland, 1980); socioeconomic status, positive maternal attitude towards childbearing and motherhood, child temperament and development (Barglow, Vaughn, & Molitor, 1987); and stress levels experienced by the mother (Howes & Stewart, 1987; Gamble & Zigler, 1986; Howes & Rubenstein, 1985) are all closely related both to the probability that a child will be placed in a day care setting and to mother infant relationships. These potential confounds have not yet been adequately addressed by current day care research. It remains unclear how these variables mediate the relationship of child care arrangement to adaptation and development. What is clear, however, is that it is critical to control for background variables in research attempting to assess the impact of day care on development in general, and on emotional attachment to the mother in particular. Equally clear is that research on day care effects must be sensitive to individual temperamental qualities of the children, and their role in mediating both adaptation to the day care setting and to the establishment of the infant-mother bond.

Before examining the role of temperament in adaptation to day care, let us first review the role of temperament on development in general.

### The Infant-Mother Dyad

The process of individual development is constantly changing and developing. The interaction of individual behavioral style and environment will produce certain outcomes. This dynamic process involves ever-changing environmental opportunities, demands, or expectations which can reinforce old behaviors, or promote new ones.

The literature has long recognized the importance of individual differences in behavior style in relation to psychosocial development. In fact, it has been suggested that what may be more important in understanding infant-mother relationships is the "goodness of fit" between infant and parent characteristics. Several authors have described a bidirectional model of parent child relations, in which child characteristics (i.e. behavioral style or temperament), parental reactions and feedback, and resulting child behavior are described as child context "circular functions" (Lerner & Galambos, 1985; Lerner & Lerner, 1983; Chess, Thomas & Birch, 1959); Schneirla, 1953). The child can gain, through feedback, the effect of his/her influence on others, acting then as a producer of his/her own development (Lerner, 1982). This relationship has been described by the "goodness of fit" model, which specifies "positive feedback and child outcomes

when there is a match between child characteristics and contextual demands and negative feedback and child outcomes when there is a mismatch between these elements" (Thomas & Chess, 1977; Lerner & Lerner, 1982; Windle & Lerner, 1986). In brief, "goodness of fit" is the result of an affinity between environmental demands and the child's temperament. When this harmony is present, optimal positive development is possible. When these systems are discordant (i.e. discrepancies and dissonances between the temperament and other characteristics of the child and the environmental demands, expectations, opportunities), this "poorness of fit" can result in distorted or maladaptive functioning within the infant-mother dyad (Thomas & Chess, 1977; Chess & Thomas, 1986). An example of "poor fit" might be the gregarious, highly energetic, outgoing infant with a very rigid, controlling mother, where the behavioral styles of each individual clash rather than complement each other (similar to the traditional bull in the china shop). Therefore, it is imperative to examine how both infant and mother characteristics interact to produce particular outcomes.

### Infant Temperament

One infant characteristic hypothesized to have an impact on infant-caregiver interactions is temperament (Holmes, Reich & Pasternak, 1984; Thomas & Chess, 1980). Individual behavioral styles (or temperament) refer to the unique styles with which individuals interact with their environment.



Diverse explanations of the construct have been offered, Mark Twain (1938) went as far as to say that even Satan had a definition for temperament: "Temperament is the law of God written in the heart of every creature by God's own hand, and must be obeyed in spite of all restricting or forbidding statutes, let them emanate whence they may" (p. 38). The notion of temperament as so extremely rigid and deterministic (as Twain suggests) has given way to viewing it more as a rubric than a trait itself (Plomin & Dunn, 1986). This leads to the concept of temperamental dimensions that reflect behavioral tendencies instead of identifying discrete behavioral acts. Temperamental traits are usually defined as cross-situationally and developmentally stable behavior tendencies with strong, inborn, biological roots (Bretherton & Waters, 1985; Goldsmith & Campos, 1982; Plomin, 1983; Rothbart & Derryberry, 1981).

The New York Longitudinal Study (NYLS), a landmark work of Thomas, Chess and their colleagues (1963), was one of the first systematic examinations of individual differences within the context of environmental interaction. These authors conceptualized temperament as the individual's emotional reactivity or behavioral style in interacting with the environment. Temperament describes how the child behaves, rather than what the individual can do, their abilities, or why they do it, which is a matter of internal organization or motivation (Thomas & Chess, 1977). Temperament is described

by these authors as "...the stylistic component of behavior - the how as differentiated from the motivation, the why of behavior and abilities, and the what of behavior." The NYLS was designed to determine the significance of early temperamental dimensions in later personality development and adjustment. The authors attempted to identify certain temperamental types, to assess the stability of these over time, and to study the interaction of temperament with the environment. They identified nine dimensions of temperament:

1. **Activity Level:** the extent to which a motor component exists during bathing, eating, playing, dressing, and handling; information on sleep-wake cycle, reaching, crawling, and walking.

2. **Rhythmicity:** the predictability in time of such functions as the sleep-wake cycle, hunger, feeding and elimination.

3. **Approach or Withdrawal:** the nature of the response to a new stimulus (food, toy, or person).

4. **Adaptability:** change in response to new or altered situations (not initial response as in approach-withdrawal).

5. **Intensity of reaction:** the energy level of response.

6. **Threshold of responsiveness:** the intensity of level of the 'stimulation necessary to evoke a response.

7. **Quality of mood:** the amount of pleasant, joyful, and friendly behavior, as contrasted with unpleasant, crying, and unfriendly behavior.

8. **Distractibility:** the effectiveness of extraneous stimuli in interfering with the ongoing behavior.

9. **Attention span and persistence:** Attention span refers to the length of time a particular activity (self-initiated or participated in) is pursued; persistence refers to the child's maintaining an activity in the face of obstacles to its continuation.

Although these individual temperamental attributes were found to have significant impact on a child's development, it was the interaction between a child's temperament and environment (e.g. caregiver attitudes and behaviors, other external demands) that was the most critical factor in a child's adjustment. It appears that temperament is an attribute of the child which mediates the influence of the environment (Plomin & Dunn, 1986). In other words, rather than viewing the infant as a passive participant in dyadic interactions, temperament includes abilities that enable the child to regulate social relationships. For example, research has linked individual differences in temperament to infant and child psychological health (Chess & Thomas, 1984; Thomas & Chess, 1977), resilience to stress (Werner & Smith, 1982), coping with medical illness and hospitalization (Rutter, 1983), and quality of parent-child interactions (Crockenberg, 1981).

Yet another example of how the child's temperament and the environment interact to determine the course of

development can be seen in the finding that infant temperament significantly influences the behavior and attitude of caregivers and plays a significant role in the child/environment interaction process at various stages of development (Thomas, 1984). As offered by Goldsmith & Campos (1982, p. 162) "Differences in temperament can elicit, modify and prevent many social behaviors of the caregiver." For example, difficult infant temperament has been shown to be related to lower maternal responsiveness (Stevenson-Hinde & Simpson, 1982; Hinde, Easton, Mellon, & Thamplin, 1982; Milliones, 1978; Goodman & Campbell, 1979; Kelly, 1976). In addition to this diminished responsiveness, infant characteristics associated with the "difficult" temperament have been tied to more negative types of maternal response such as more restriction and punishment (Peters-Martin and Wachs, 1984) and intrusive or power-assertive control (Lee and Bates, 1985).

Research suggests that in addition to general effects of certain temperamental attributes on maternal behavior, the behavior of the parent may be ultimately determined by the "goodness of fit" between mother and infant. For example, although "difficult" temperament (a specific cluster of temperamental attributes characterized by irregularity of biological functions, withdrawal from the new, slow adaptability, intensity of mood, and generally frequent negative mood which make child-rearing more difficult for

parents within our social culture) has been shown to be related to comparatively adverse mother-infant interactions, those parents who were themselves temperamentally "difficult" and who understood and adapted to the child's intense reactions and irregular patterns could interact positively with their child and thereby offset negative effects to the child's development (Thomas, Chess, & Birch, 1968; Kelly, 1976; Milliones, 1978; Campbell, 1979).

Since the research suggests that the parent's interpretations of their child's temperament have important implications for how they interact with their child, any factors external to the parent and child that might have an effect on these perceptions could also potentially affect the quality of parent-child interaction, and hence, development. For example, one recent study (Belsky & Rovine, 1988) revealed that insecurely attached infants of working mothers were rated by their mothers as more temperamentally "difficult" than insecurely attached infants being raised solely by their mother. In addition, the investigators found that mother's perceptions of their infant's temperament were linked to insecure attachment, rather than being an purely objective assessment of infant behavior. As the primary source of assessment of infant temperament is parental (usually maternal) report (Matheny, Wilson, & Thoben, 1987), it is possible that maternal reports of infant temperament do not correlate strongly with other objective measures, such as

independent observations (Bates & Bayles, 1984; Hubert et al, 1982). Some have suggested that this lack of agreement is a function of mother biases, subjective components such as personality, social class, and/or child-rearing attitudes (Sameroff, Seifer, & Elias, 1982; Vaughn, Taraldson, Crichton, & Egeland, 1981). This implies that reported infant temperament is dependent, to at least some degree, on personality characteristics of the mother, as well as her state of being. This suggests that maternal perceptions, attitudes, and actions may be very important in determining which children are vulnerable and at risk (Clarke-Stewart, 1989).

### Maternal Characteristics

In addition to characteristics of the child, such as temperament, the relationship between mother and child is influenced by maternal perceptions, attitudes and values. The "goodness of fit" match within the mother-child dyad may be significantly affected by excessive stress within that system. While some degree of stress and conflict are expected and indeed constructive "when in keeping with the child's developmental potentials and capacities for mastery" (Thomas & Chess, 1980, p. 90), excessive stress resulting from poorne'ss of fit between environmental demands and child abilities can cause disturbed behavioral functioning. Gamble & Zigler (1986) have suggested that stress producing environmental circumstances are likely to affect the mother's

physical availability, and possibly her emotional availability. This has been demonstrated in primate research (Rosenblum & Paully, 1984), where mothers placed in stressful environments, while physically present, were generally unable to be contingently responsive to infant needs. A mother's emotional state can also have an impact on the way she views her child. For example, in a study of mother's perceptions of their infants, the authors found that anxious mothers are more likely to have anxious children (Bates & Bayles, 1984), with more difficult temperaments. One might posit that stress taxes the energies of the mother, thus leaving her less responsive to the infant. Mothers who are feeling stressed and resentful of the demands placed on them interact differently and engage in fewer positive interactions with their infants than mothers who are reasonably low-stressed and content (McCartney & Galanopoulos, 1988; Barglow, Vaughn, & Molitor, 1987; Gamble & Zigler, 1986).

Several other characteristics of working mothers can lessen their emotional availability to their children, such as the increased stress of handling two full-time jobs (working and motherhood) (Clarke-Stewart, 1989), pressure to both stay at home and enter the labor force (McCartney & Phillips, 1988), and maternal separation anxiety (Hock, 1985). Such role conflicts may result in guilt feelings and doubts about their child-rearing competencies (Birnbaum, 1971). These guilt feelings appear nested within the task of reconciling

two selves, one believing that a happy working mother is better than a resentful mother that stays home, the other fearing that one's work somehow harms their child or the relationship between them (McCartney & Phillips, 1988). If this is the case, one might expect working mothers to experience higher levels of stress than do homemakers. Mothers who are in role conflict or who do feel guilty about placing their child in day care, may be expected to feel dissatisfied, low in morale and have low self esteem, which affects their ability to be sensitive to their infant (Lamb, Owen, & Chase-Landsdale, 1979. Hoffman, 1974). However, several researchers (McCartney & Phillips, 1988; McCartney, Scarr, Phillips, Grajek, & Schwartz, 1985; Scarr, 1984) have demonstrated that these feelings do not necessarily preclude mothers from being emotionally available to their infants. In fact, their research suggests that part-time working mothers appear to experience the least role conflict and guilt, while also exhibiting greater self esteem, thus giving them the best of both worlds.

In sum, the literature presents a conflicting picture of the beneficial and detrimental effects of maternal employment in terms of increased stress, enhancement of self esteem, and the basic mother-infant relationship. The interaction of maternal attitudes, perceptions, and general state of being and infant temperament is the critical equation behind the emotional development of children. The addition of a variable



such as day care may significantly impact this dyad in a number of ways, which may in turn be dependent on particular aspects of either the mother, the infant, or both.

### Rationale for the Research Study

Based on the foregoing introduction and literature review, the following conclusions were presented as the rationale for the practical and theoretical need for the study:

1. Day care is an major social issue. Disagreement concerning its beneficial or harmful effects is hotly debated, yet research has been unable to identify what aspects of child care make it a good or bad experience, or what children should or should not be in it. Perhaps it is a combination of maternal and child characteristics that are optimal for successful day care experiences.

2. Temperament has been implicated as a critical factor affecting mother-infant interaction, yet little research has examined how infant temperament is related to placement in day care, and how infant temperament is affected by day care, or how the effects of day care may be influenced by individual temperamental attributes of the child.

3. Maternal stress has also been implicated as a critical factor affecting mother-infant interaction, yet little is known about its relationship to infant temperament, or by infant placement in day care, and finally how maternal stress affects the child's response to the day care setting.

## Hypotheses

### Hypothesis One

This research sought to examine differences between day care and home care mothers in their reported stress levels, and in their temperament classification of their infants. It was predicted that due to the increased demands of full time employment and parental responsibilities, day care mothers would report higher levels of stress than home care mothers.

It was also predicted that day care mothers would not differ from home care mothers on the temperamental classification of their infants. However, it was predicted that mothers of difficult infants would report higher stress levels than mothers of easy infants.

### Hypothesis Two

The research further addressed the relationship between reported maternal stress and the nine specific temperament dimensions (activity level, approach-withdrawal, adaptability to new situations, intensity of reaction, distractibility, perseverance, threshold, rhythmicity, and mood). Specifically it was predicted that high scores on the temperament dimensions associated with the difficult cluster (i.e. rhythmicity, approach/withdrawal, adaptability, intensity, and mood) would be related to high stress scores. Furthermore, because day care mothers are expected to have higher stress scores, these relationships are expected to be stronger for this group.

## CHAPTER II

### RESEARCH DESIGN AND METHODOLOGY

The project was designed to assess the interrelationship of maternal stress, rating of infant temperament, and the type of child care employed.

#### Design

Quasi-experimental correlational research methodologies were utilized in this study. A factorial design was employed, in which the factors were child care status (home care versus day care) and temperament classification (easy versus difficult). The dependent variable was maternal stress (total, child-oriented, parent-oriented).

#### Methodology

#### Setting

Day Care. In the present study, day care refers to full time out of home care. Four day care centers located in the Chicago Metropolitan area provided the subjects for the day care group. Three of the centers were north suburban, one was in Chicago, and all were not-for-profit. The population served by the three suburban centers was generally middle class, 'two parent families. The population served by the Chicago center was also predominantly middle class, but did include a somewhat broader spectrum of socioeconomic levels

and ethnic groups. Because of the variability in these factors, only families of middle socioeconomic status comparable to the other centers were included in this study. According to the Howes & Olenick, (1986) criterion, all of these centers were characterized as high quality, i.e. maximum adult:child ratio of 1:4 for children two years of age and younger; supervisory caregivers with formal training in child development; no more than two primary teachers over the year). In all centers, the maximum number of infants per group was 12, so that three or more staff were present in a full group. These included the head (or lead) teacher who was primarily responsible for the group. Minimum qualifications for the lead teacher was a B.A. degree, usually in early childhood education, and day care experience. Other caregivers had taken course work in early childhood development and practical work experience.

Home care. Home care subjects were recruited through a private pediatric practice located in the Lincoln Park area of Chicago and affiliated with a major pediatric medical center. The population served by this practice was comparable to that of the day care centers in terms of socioeconomic class and ethnicity, as will be shown in the subjects section. All infants in this group had been in full time maternal care since birth.

### Subjects

Subjects consisted of 56 mothers and their infants (aged

15 to 63 weeks) equally divided between day care and home care groups. The majority were white intact families with 1-2 children, and well educated parents with high incomes. Excluded from both groups were infants with significant medical problems, and non-English speaking families. Infants were matched on age and sex and there were no significant differences between the two groups on any dimensions except age of father. Demographic data are reported in Table 1. Chi-square analyses revealed a significant difference of the age of the father. While most fathers were between 30 and 39 years of age, the day care group had more older fathers (N=5 vs. N=1) and the home care group had more younger fathers (N=6 vs. N=1). Infant age ranged from 15 to 63 weeks.

### Procedure

In the day care group, infants in the infant care room of the day care centers (6 weeks to 14 months of age) and their families were eligible to participate. Parents were sent an introductory letter from the day care center director, briefly explaining the center's participation. Home care subjects were selected through the records of the pediatric practice. Mothers in both groups were contacted by an investigator to explain the purpose of the study. All day care parents who were contacted by the investigator agreed to participate. Of these, two returned incomplete questionnaires and were excluded from the analysis. Their matched home care participants were also excluded. Two home care mothers failed

Table 1

Characteristics of Subjects and Families.

Infants (N=56)	Home Care		Day Care		
<hr/>					
Infant age (weeks)					
Mean (S.D)	33.96	(11.3)	34.18	(11.5)	
<hr/>					
	Home Care		Day Care		Chi-Sq
	N	%	N	%	
<hr/>					
Sex					
Male	18	64	18	64	
Female	10	36	10	36	
					.00
No. of Children (incl. Infant)					
1	16	57	16	57	
2	11	39	10	36	
3			1	3.5	
4	1	4	1	3.5	
					1.05
Mother Age					
22-29	7	25	5	18	
30-39	18	64	22	79	
40-49	3	11	1	4	
					1.73
Father Age					
22-29	6	21	1	4	
30-39	21	75	22	78	
40-49	1	4	5	18	
					6.26*
Marital Status					
Married	26	93	27	96	
Separated	2	7	1	4	
					.35

\* =  $p < .05$ \*\* =  $p < .01$

Table 1 (continued)

	Home Care		Day Care		Chi-Sq
	N	%	N	%	
<b>Income</b>					
20-30,000	2	7	1	4	
30-40,000	2	7			
40-50,000	4	14	3	11	
50-60,000	4	14	3	11	
60,000 + over	14	50	15	54	6.21
<b>Ethnic</b>					
White	26	92	27	96	
Hispanic	1	4			
Oriental	1	4			
Other	1	4			3.02
<b>Mother Education</b>					
High School Dg.	2	7			
Some College	3	11	4	14	
College Grad	14	50	16	57	
Master's	7	25	7	25	
Doctoral	2	7	1	4	2.61
<b>Father Education</b>					
Some College	5	18	34	11	
College Grad	13	46	11	39	
Master's	5	18	7	25	
Doctoral	4	14	6	21	
Voc./Tech.	1	4	1	4	1.40

\* = p &lt; .05

\*\* = p &lt; .01

to return their questionnaires, one stated that the measures took too long to fill out, the other misplaced the packet, and was then unable to be age-matched to a day care subject. Their matched day care subjects were assigned new controls. All parents who agreed to participate completed the informed consent form (day care group see Appendix A; home care group Appendix B).

Upon receiving parental consent, each family was given (day care group) or mailed (home care group) a packet containing the self-report measures to be completed at home. Mothers were asked to return the questionnaires within one week.

### Measures

1) Temperament. Temperament was assessed using the Revised Infant Temperament Questionnaire (Carey & McDevitt, 1978, see Appendix C). This questionnaire uses maternal ratings to establish scores along nine dimensions: activity level, approach-withdrawal, adaptability to new situations, intensity of reaction, distractibility, perseverance, threshold, rhythmicity, and mood (positive vs. negative). The scale assesses these dimensions by eliciting parental responses to 95 behaviorally descriptive statements. Responses indicate frequency of behavior along a six point continuum, (1=almost never to 6=almost always) (Carey & McDevitt, 1978). In addition to the nine dimensions, three constellations have been defined as a way of classifying temperament in children:



easy (40%); difficult (10%); and slow to warm up (15%). The remaining 35 % of subjects who, on the basis of their scores, do not fall into these categories prompted Carey (1970) to designate two additional categories. They were: a) intermediate high (toward the "difficult" group); and b) intermediate low (toward the "easy" group).

### Standardization

The instrument was standardized on a sample of subjects selected from three private pediatric practices, two in suburban Philadelphia, the third in New York. The sample consisted of 104 boys and 99 girls between the ages of 4 and 8 months. The majority of subjects were from white middle class families, thus raising some question regarding the appropriateness of the instrument with minority groups or lower socioeconomic class families. It was not specified whether any of the sample infants were in day care, however this is highly unlikely given the period during which it was conducted. Although its standardization sample consisted of infants 4 to 8 months of age, the instrument has been used with older (up to 1 year) infants (W.B. Carey, personal communication, 1990; W. Fullard, personal communication, 1990).

One month test-retest reliabilities (mean interval = 25.1 days) were conducted on 41 subjects. Reliability coefficients for the nine temperament dimensions ranged from .66 to .86, with a mean of .76. Internal consistency for the nine

dimensions ranged from .49 to .83 with a mean of .61.

Although the external validity of temperament scales is difficult to establish with certainty (Carey & McDevitt, 1978), due to the lack of standardized observational techniques covering temperamental dimensions, a review of the temperament measures (Hubert et al., 1982) suggested that "...the most promising concurrent validity findings appear to involve the Revised Infant Temperament Questionnaire (p. 576)." Plomin (1983) identified the "systematic series of questionnaires" (including the Revised Infant Temperament Questionnaire) as the instruments of choice in studying parental ratings of the NYLS dimensions. These observations were echoed by Chess and Thomas (1986).

#### Parental Attitudes and Stress

Maternal experiences of stress were measured via the Parenting Stress Index (see Appendix D), a parent self-report instrument designed to measure the relative magnitude of stress in the parent-child system and to identify the source domains of stress (Abiden, 1986). The Parental Stress Index is based on the additive model of stress and the assumption that stressors are multidimensional. The index is a screening and diagnostic tool yielding a measure of the relative magnitude of stress in the parent-child dyad. It is designed to identify parents who are "at risk" for experiencing stress in the parenting role, and to assess whether that stress is related to child characteristics or parental/family variables.

The PSI is a 120 item Likert-type scale, in which parents are asked to think of their children and describe their feelings along a continuum of 1 (strongly agree) to 5 (strongly disagree). It has been well standardized and yields: a Total Domain stress score; a Child Domain score; a Parent Domain score; and a life stress score.

Although the Child Domain items refer to the child's temperamental characteristics which are predictive of behavioral problems, they are not a measure of temperament per se. Rather, these items assess the degree of parental stress attributed to child characteristics and behaviors (Thomas & Chess, 1977; Abidin, 1986). The Child Characteristics Domain is composed of the following categories:

1. Child Adaptability/Plasticity: the ability to adjust to changes in the physical or social environment.
2. Acceptability of Child to Parent: the degree to which the child's physical, intellectual, and emotional characteristics match the parent's expectations.
3. Child Demandingness: the degree to which the parent experiences the child as placing many demands on him/her.
4. Child Mood: the child's affective functioning.
5. Child Distractibility/Hyperactivity: the parent's perception of the child's level of activity and concentration.
6. Child Reinforces Parent: the degree to which the parent experiences the child as a source of reinforcement.

The Parent Domain scales assess individual characteristics of the parent and his/her social support systems, and measure the stress attributable to the responsibilities and demands of parenting. The Parent Characteristics Domain is composed of the following categories:

1. Parent Depression: the feelings of guilt, unhappiness, and depression.
2. Parent Attachment: the emotional closeness to the child and ability to understand the child's feelings and/or needs.
3. Restrictions Imposed by Parental Role: the degree to which the parent experiences the parental role as restricting freedom and frustrating their attempts to maintain their identity.
4. Parent's Sense of Competence: the parent's perceived degree of competence in fulfilling the parental role.
5. Social Isolation: the degree of isolation from peers.
6. Relationship with Spouse: the emotional and active support in the relationship.
7. Parental Health: the general health of the parent.

An optional life stress scale is also included , which is designed to identify specific events generally thought to be stressful (e.g. divorce, death of spouse, loss of job,

etc.).

The structure of the index in terms of its three subscales is patterned after the "goodness of fit" model, where stress is broken down into components of child, parent, and life stresses. Therefore, this instrument is a logical choice for assessing stress within the infant mother-dyad, as it has been partially derived from the same theoretical framework of viewing infant behavior as is the Infant Temperament Questionnaire.

The PSI was normed on a sample of 534 parents who visited several small group pediatric clinics in central Virginia. The sample was predominantly Caucasian (92%), followed by Black (6%). Mother's age ranged from 18 to 61 (mean=29.8), father's ages ranged from 18 to 65 (mean=31.6), and child's age ranged from 1 month to 19 years. Approximately 90% of the fathers and 13% of the mothers were working full time. The educational level was high, with approximately one third of the mothers and fathers having graduated from college, graduate, or professional school.

Internal consistency coefficients for the normative sample were as follows: Child Domain, from .62 to .70; Parent Domain, from .55 to .80. Reliability coefficients for the normative sample were: Child Domain, .89; Parent Domain, .93; and Total Domain, .95 (Abidin, 1986). Stability of test-retest reliabilities across time intervals of 3 weeks to one year were also reported in four other studies (Burke, 1978;

Hamilton, 1980; Zakreski, 1983; Abidin, 1986 as cited in Abidin, 1986). Coefficients ranged from .55 to .81 for the Child Domain; from .69 to .91 for the Parent Domain; and from .65 to .96 for the Total Domain.

Abidin (1986) conducted a factor analysis of the Parenting Stress Index of the original sample. Each domain was subjected to a principal components analysis. A varimax rotation criterion was used to rotate components. Within the Child Domain the six factor solution (i.e. the domain subscales) accounted for 41% of the variance. For the Parent Domain, the seven factor solution (i.e. the domain subscales) accounted for 44% of the variance.

A replication of this analysis was conducted with 447 Bermudian mothers (Hauenstein, Scarr, & Abiden, 1986). The results of this study supported the previous factor loadings.

Data has demonstrated evidence of concurrent validity between the Child Domain of the Parenting Stress Index and the Quay and Peterson Child Behavior Checklist (Lafiosca & Loyd, 1981; 1987). Casey (1983) reported significant positive relationships between the Achenbach Child Behavior Checklist and the PSI Child Domain score ( $r = .56, p < .001$ ), and with the PSI Parent Domain score ( $r = .40, p < .001$ ).

Several studies have assessed discriminant validity through a comparison of specific groups in relation to normal (control) subjects. Groups in expected high stress categories including: 1) children with medical problems such as cerebral

palsy (Zimmerman, 1979); Spina Bifida (Kazak & Marvin, 1984); mental retardation (Greenberg, 1983); and 2) children and families with emotional or behavioral problems such as emotionally disturbed and learning disabled children (Jenkins, 1982, cited in Abidin, 1986); developmentally delayed children (Upshur, 1981; Saviano, 1981); hyperactive children (Mash, 1983a); and abusive/non-abusive parents (Mash, 1983b). These studies demonstrated the ability of the Parenting Stress Index to discriminate between different groups in general stress level, and in specific areas (stress domains).

## CHAPTER III

### RESULTS

#### Temperament

As discussed in the previous section, Thomas et al. (1968) described three categories based on the nine temperament dimensions. The categories are a) the easy child; b) the difficult child; and c) the slow-to-warm-up child. Carey (1970; 1978) offered two additional categories (high and low intermediate) to account for those infants who did not fit into any of the above categories. Table 2 presents a comparison between the present and normative samples for these temperament clusters.

Simple Chi-Square analyses were conducted to assess differences between the present and normative samples on temperament classification. No significant differences between the Home Care group and the norm, or between the Day Care group and the norm were found for combined categories (Easy, Difficult). Intermediate Low, Difficult, and Intermediate High), both the Home Care and the Day Care groups reported a greater number of temperamentally difficult children than would be expected. In addition, these infants were classified at the extreme of the difficult cluster,



Table 2

Temperament Cluster Distributions for Present and  
Normative Samples

Temperament Cluster	Home Care (N=28)		Day Care (N=28)		Normative (N=203)
	%	Chi-sq	%	Chi-sq	%
Easy	17.9	3.43	28.6	.91	40.0
<u>Intermediate Low</u>	<u>46.4</u>	<u>1.42</u>	<u>39.3</u>	<u>.29</u>	<u>33.4</u>
(Combined)	64.3	.32	67.9	.12	73.4
Difficult	21.4	4.29*	21.4	4.29*	9.4
<u>Intermediate High</u>	<u>3.6</u>	<u>1.47</u>	<u>0.0</u>	<u>3.16</u>	<u>11.3</u>
(Combined)	25.0	.25	21.4	.01	20.7
Slow-to-warm-up	10.7	1.09	10.7	1.09	5.9

\* =  $p < .05$

suggesting that either: 1) mothers in the Home Care and Day Care groups had more "difficult" infants than the normal population; or 2) mothers in the two groups with difficult infants do not view difficulty on a continuum, and that intermediate levels of difficult infant behavior do not apply.

### Parental Stress Index

In order to determine whether the present sample differed in reported stress levels from the norm, t-tests were performed between parent and normative means. Means and standard deviations for child, parent, and total domain scores of the Parental Stress Index for the present and normative samples are presented in Table 3.

The results indicated that child domain scores were significantly lower than the norm for both home care ( $t=-3.37$ ,  $p<.01$ ) day care ( $t=-2.31$ ,  $p<.05$ ), indicating that both samples attribute less stress to their infant's behavior than would be expected from normative data. Furthermore, home care mothers reported less total stress ( $t=-2.96$ ,  $p<.01$ ) than the normative sample. Therefore, home care mothers in this study are generally less stressed than would be expected. No other stress scores for either group were significantly different than the norms.

### Hypothesis One

The first research hypothesis sought to determine whether there were differences in maternal stress as a function of care condition and infant temperament. This was explored by

Table 3

PSI Means and Standrad Deviations for Day Care (N=28)  
and Home Care (N=28) Groups for Present and Normative  
(N=534) Samples

PSI Domain	<u>Home Care</u>	<u>Day Care</u>	<u>Normative</u>
	Mean (SD)	Mean (SD)	Mean (SD)
Child Domain	88.79 (15.10)	91.46 (15.89)	98.40 (19.20)
Parent Domain	118.68 (18.88)	120.32 (21.72)	122.70 (24.60)
Total Domain	207.18 (24.91)	211.79 (34.33)	221.10 (38.90)

means of a two-way (2 X 2) analysis of variance, with temperament classification (easy versus difficult)\* and group (home care versus day care) as the independent variables. The dependent variables were the domain Scores (child, parent, and total) of the Parental Stress Index.

The results of the anova are presented in Table 4, and in Figures 1, 2, & 3.

Only 6 subjects (3 per group) were classified as temperamentally slow to warm up, and therefore this category was excluded from the analysis. Intermediate classifications were condensed with their requisite "close" group (i.e. high intermediates to difficult, low intermediates to easy) as previously outlined, resulting in 2 temperament classifications; easy and difficult.

#### Total Domain

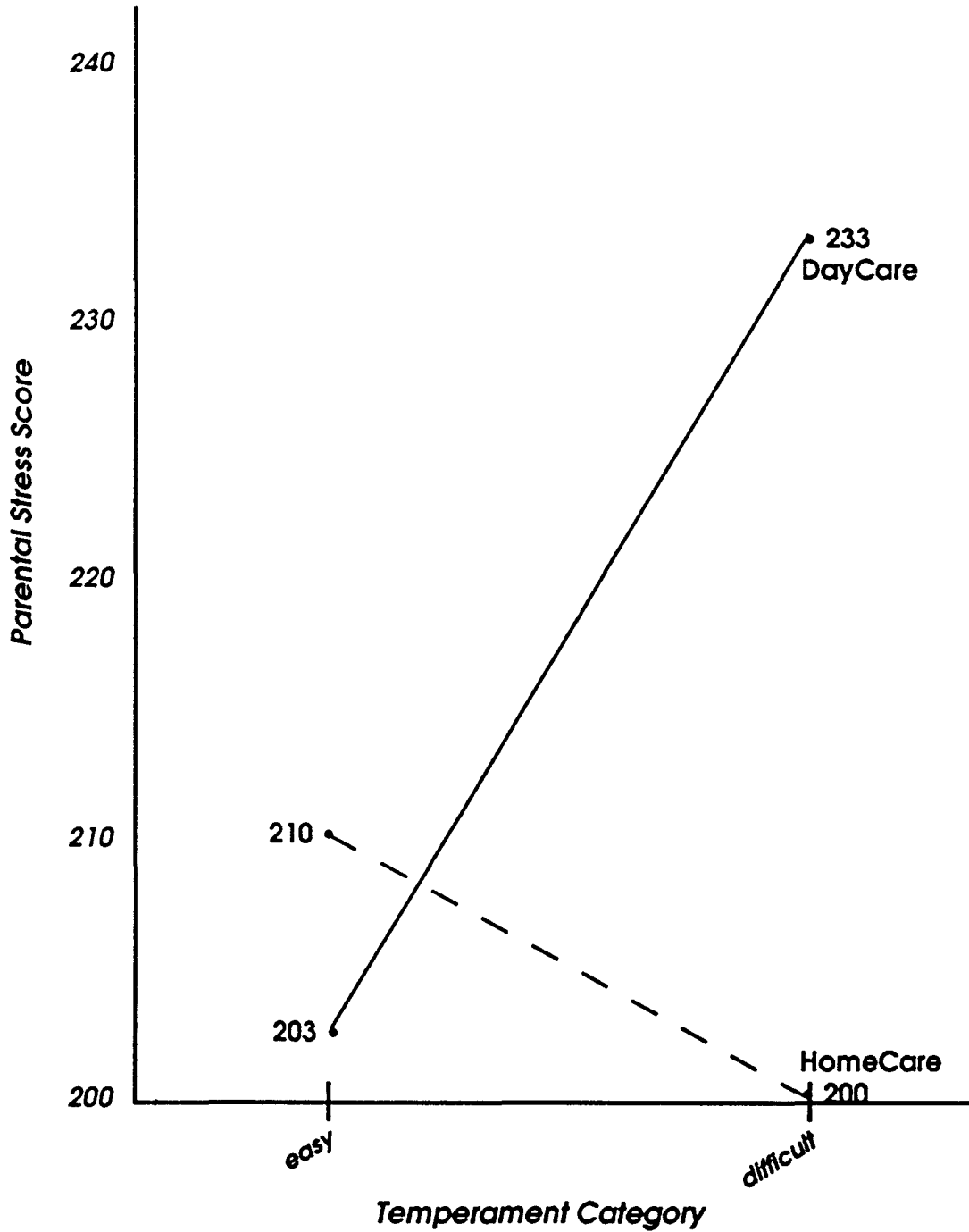
Neither temperament nor care group had significant main effects on mother's stress scores as measured by the Total Domain score on the PSI. However, there was a significant interaction between temperament and group on Total Domain stress score,  $F(1,50)=4.66$ ,  $p<.05$ , indicating that while there was little difference in overall stress scores for mothers with easy infants as a function of care status, care status did affect maternal stress levels in mothers of difficult infants. Day care mothers of difficult infants reported higher stress levels than home care mothers of difficult infants (post-hoc tests for simple effects:  $F(1,46)=5.32$ ,

Table 4

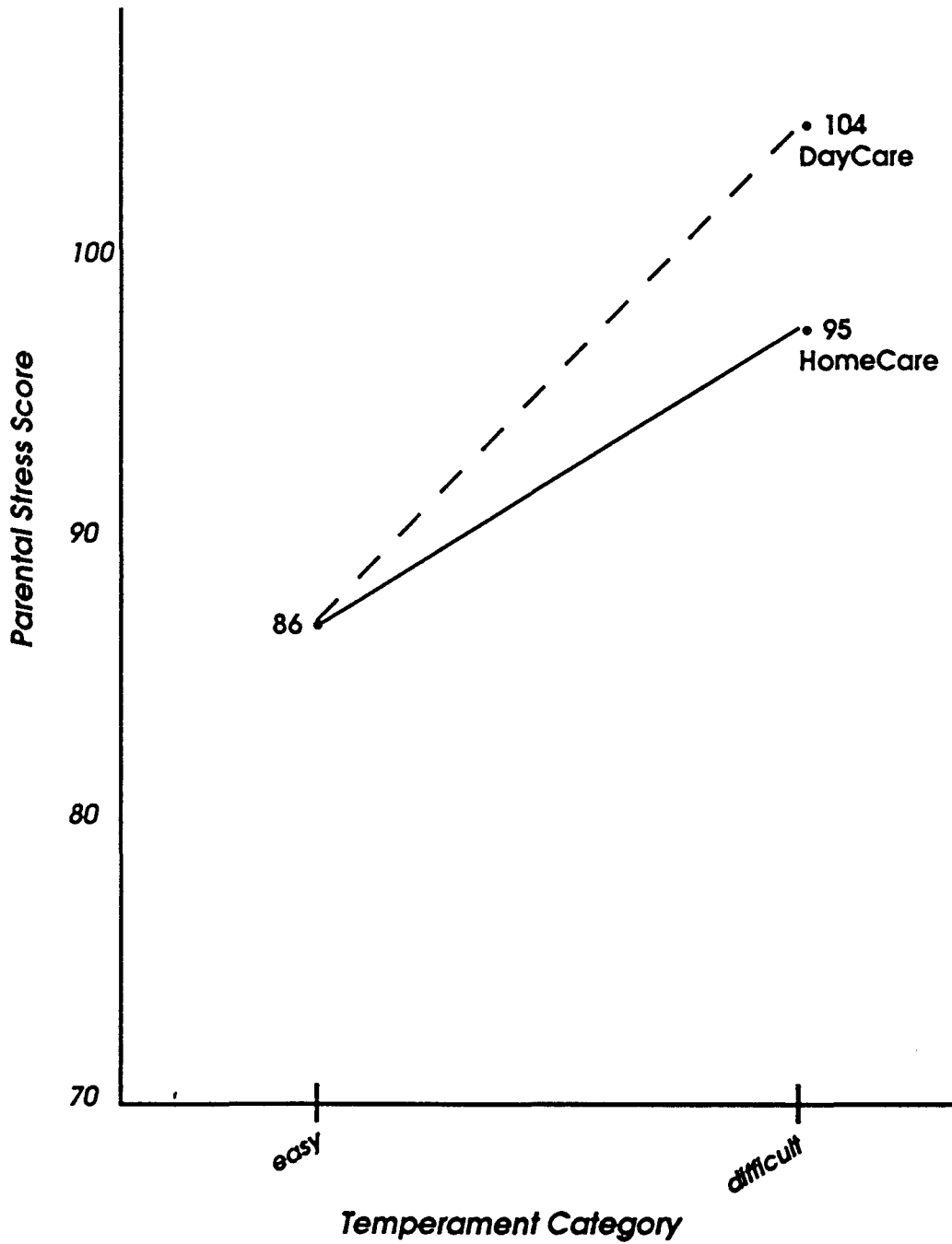
Analysis of Variance - Domain Stress Scores by  
Temperament and Day Care Status

Source of Variation		Sum of Squares	df	Mean F obs. Square
<u>Dependent = Total Domain</u>				
Main Effects				
Temperament	868.68	1	868.68	1.09
Group	174.53	1	174.53	.22
Interaction				
Temp by Grp	3708.43	1	3708.42	4.66*
Error	36587.85	46	795.39	
<u>Dependent = Child Domain</u>				
Main Effects				
Temperament	1630.73	1	1630.73	3.88**
Group	74.35	1	74.35	.34
Interaction				
Temp by Grp	179.47	1	179.47	.83
Error	9934.60	46	215.97	
<u>Dependent = Parent Domain</u>				
Main Effects				
Temperament	135.30	1	135.30	.39
Group	11.73	1	11.73	.03
Interaction				
Temp by Grp	2322.07	1	2322.07	6.61**
Error	16150.95	46	351.11	
* = p < .05      ** = p < .01				

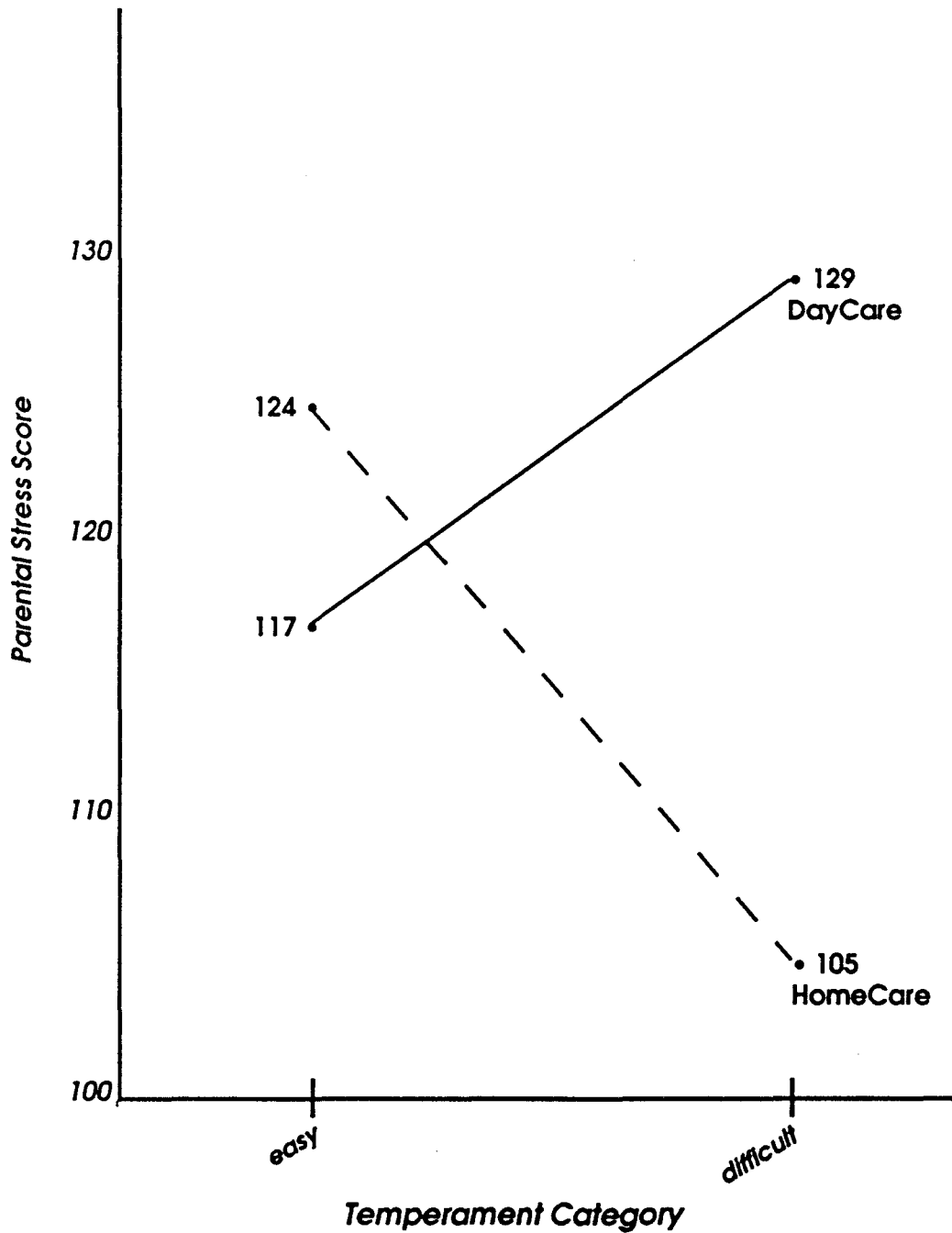
## Temperament Category By Stress Score For Total Domain



## Temperament Category By Stress Score For Child Domain



## Temperament Category By Stress Score For Parent Domain





$p < .05$ ). This suggests that the combination of full time day care and a temperamentally difficult infant are related to increases in maternal stress, but that neither variable considered alone contributes to increasing stress levels.

#### Child Domain

When Total Domain stress was broken down into Child and Parent domains, the following patterns emerged.

Temperament category was found to affect overall levels of Child Domain stress,  $F(1,50)=7.55, p < .01$ , as seen in higher stress levels in this domain for mothers of difficult infants. However, neither group status nor the interaction of group status and temperament category had a significant impact on stress scores in the Child Domain. These results suggest that child care status has little relation to maternal stress levels attributable to child characteristics.

#### Parent Domain

Neither temperament category nor care group significantly affected Parent Domain stress levels. However, a two way interaction between temperament and group influenced Parent Domain stress score,  $F(1,50)=6.61, p < .01$ . This interaction between care group and temperament basically paralleled that obtained in the analysis of Total Domain scores: higher maternal stress scores in the Parent Domain were reported by mothers with difficult infants who were also placed in full time day care. Post hoc simple effects tests indicated that day care mothers with difficult infants reported higher stress

scores (attributed to feelings of parental inadequacy) than home care mothers of difficult infants,  $F(1,46)=4.39, p<.05$ . Mothers of easy infants were not significantly different in their reported stress levels as a function of care group.

### Hypothesis Two

The next set of analyses conducted tested the hypothesis that specific infant temperamental dimensions are related to maternal stress. Pearson Product-Moment Correlations were computed to examine these associations. Table 5 shows the correlation matrix among these variables.

Of the ITQ dimensions, activity, approach/avoidance, adaptability, mood, and distractibility were found to be moderately related to reported stress in the child domain. Mood was also found to be positively related to total domain stress. Given these results, further analyses were conducted to determine whether these patterns were upheld in individual groups.

The analysis revealed no significant correlations between the temperament dimensions and the domain stress scores for the home care group. Within the day care group, temperament dimensions of adaptability, mood, and distractibility were related to reported stress in the child domain. Therefore, the mothers of infants who are: 1) not adaptable to new situations; 2) and/or are frequently depressed, who often cry and tantrum; 3) and/or are easily distractible are more likely to feel stressed by their child's behavior. Mood was also a

Table 5

Correlations Between Child, Parent, and Total Domain  
Stress Scores (PSI) and the Nine Temperament Dimensions  
(ITQ)

All Subjects (N=56) Temperament Scales									
	Activ.	Ryth.	Appr.	Adapt.	Intens.	Mood	Persis.	Distr.	Thresh.
Chdom	.41*	-.04	.38*	.35*	.15	.57**	.32	.49**	.20
Pardom	.10	.01	.07	.18	-.25	.21	.11	.06	-.01
Totdom	.27	-.02	.25	.30	-.09	.43**	.23	.29	.10

\*=p<.05    \*\*=p<.01

Home Care (N=28) Temperament Scales									
	Activ.	Ryth.	Appr.	Adapt.	Intens.	Mood	Persis.	Distr.	Thresh.
Chdom	.35	-.32	.32	.24	.12	.46	.34	.32	.36
Pardom	-.10	-.06	-.05	-.01	-.46	-.01	.07	-.09	-.20
Totdom	.13	-.23	.16	.15	-.26	.26	.22	.12	.05

\*=p<.05    \*\*=p<.01

(continued)



significant correlate in the total domain score, therefore mothers of infants who frequently cry and/or tantrum are likely to feel more general stress. Two of these dimensions (adaptability and mood) are associated with the difficult temperament cluster, supporting the prediction that these temperament characteristics were be more strongly related to higher stress scores in the day care group.

The size of the correlations were next compared across groups via modified t-tests. Only one relationship, rhythmicity related to child domain stress was significantly different between groups. While neither correlation was significant on its own, their pattern of association was reversed. Home care mothers of arrhythmic reported less child domain stress, while day care mothers of infants reported higher child domain stress, suggesting that home care mothers were less troubled or disturbed by unpredictable infant behavior and perhaps found it entertaining. With the exception of this pair of correlations, no other dimension-stress domain relationship was significantly different between the two groups.

## CHAPTER IV

### DISCUSSION AND INTERPRETATION

The study revealed an interesting relation between day care status, child temperamental patterns, and maternal stress. Only in those cases where a child is temperamentally difficult and placed in a day care setting were overall maternal stress levels elevated. Neither factor considered alone appeared to have a significant impact on maternal stress. Not surprisingly, this pattern was obtained in the total or overall and parental stress scores (Total Domain and Parent Domain scores) and not in the Child Domain score - where stress was purely related to characteristics and behaviors of children themselves. Working mothers with difficult infants reported greater amounts of stress than their home care counterparts. This may be explained in two ways.

Women who work a full time job, then take care of a temperamentally difficult child may be experiencing a multiple role strain. In many countries throughout the world, women work longer hours than men (Tavris & Wade, 1984), and in industrialized societies they also tend to do the majority of the shopping household chores and child care (Scarr, Phillips,

& McCartney, 1989). The differences in time spent in these activities was demonstrated by Cowen (1983) who calculated that fathers in these societies work an average of 50 hours per week in combined employment and household work, whereas mothers spend an average of 80 hours per week on the same things. Interestingly, mothers generally do not report these multiple role situations as more stressful than women with fewer roles and less responsibilities (Crosby, 1987).

In this study, mothers of difficult children in both groups attributed more stress to infant characteristics and behavior than did those of easy children. It is interesting to note that there were no significant differences between working and non-working mothers in this realm. The relationship of temperament category and child oriented stress level is in the expected direction and is the same for both mothers; mothers who have difficult children experience them as more stressful to take care of. The data also indicated that for the day care group, certain temperament characteristics were significant factors in contributing to child domain stress. Specific child related areas were found in the degree of child adaptability (poor adjustment to changes), mood (sadness, depression), and distractibility (short 'attention span). Child mood was also significantly correlated with total stress in this group. As two of these dimensions (adaptability and mood) have been closely associated with the difficult temperament cluster, these

relationships are not surprising, since the child domain subscales are oriented toward temperament related characteristics (Abidin, 1986). The fact that significant correlations were found only for the day care group suggests that day care mothers may be more attuned to these traits than home care mothers.

Working mothers of difficult infants reported higher overall stress. The multiple responsibilities of a full time job, and the bulk of household and child care duties during non-work hours may cause these mothers to feel overworked, tired and consequently stressed out. An important finding is that this scenario was found only for those mothers with difficult infants who were in day care. The mother who works a full day then comes home to a distractible, rigid, depressed infant may be more aware of these as stressful. Her already shortened time with her baby becomes overshadowed by these unpleasant behavioral interactions, and they are then seen as more stressful. Mothers raising their children full time may not pay as much attention to these attributes of the infant, as they may not be so concerned with a lack of "quality time", they have more overall time to experience positive interactions.

A 'second explanation of the findings of this study is related to the way mothers feel about placing their children in day care. Working mothers of difficult infants may interpret their infant's "difficultness" as the result of



being in day care. The resulting guilt caused by putting their child in an environment to which they respond "negatively" leads to greater stress, particularly focused around feelings of inadequacy in the parental role. This is a variation on the ideas proposed by several authors who have described maternal guilt due to role conflict, which results in guilt feelings of child-rearing inadequacy (Birnbaum, 1971; Hoffman, 1974). Within this framework, working mothers who feel guilty about multiple roles are more likely to blame themselves when their infant does not appear happy or satisfied, an apt description of the difficult child. In this study, the guilt experienced by working mothers may be more specifically tied to placing the child in a situation which "causes" him/her to be difficult. Since there was no difference in the frequency of difficult infants between the day care and home care groups, this is an incorrect assumption. In addition, the need to reconcile the desire to work and the fear that one's work will harm the child or the mother-infant bond (McCartney & Phillips, 1988) may contribute to the higher levels of stress experienced by working mothers in this study. Finally, the present sample of working mothers reported relatively high family incomes. It is possible that these mothers have chosen to return to work more because of personal satisfaction as opposed to economic necessity. This may intensify guilt feelings associated with placing her child in day care. Day care itself does not appear to directly

affect temperament, rather, maternal attribution of difficult temperamental characteristics to the infants day care experience may create significant guilt, resulting in greater amounts of stress.

### Clinical Implications

The findings of the present study reveal some important differences between day care and home care families in regard to the interaction and effects of infant temperament and maternal stress. The clinical and practical implications are twofold, first in an intervention/prevention capacity; and second, in terms of how working mothers may perceive the effects of day care upon their infants temperament.

As an intervention/prevention model, the present study appears capable of identifying a population of families "at risk" for emotional and/or behavioral problems. Several authors (Cameron, 1977,1978; Thomas & Chess, 1977; Bates, 1980; Chess & Thomas, 1986) have underscored the importance of the early identification of children and families "at risk" for later problems, both behavioral and emotional. Among these risk factors are temperament (difficult cluster) and stress. Particularly within the day care system, the approach of the present study could be used in a diagnostic manner to identify problem areas of stress and temperament. Counseling could be offered to help parents understand and adapt to their childs' needs and feelings. The development of more successful methods of child management would reduce overall

stress, and improve the quality of maternal caregiving.

Public perceptions about day care are often colored by a deluge of popularized information, which is often based upon some individual's (or group's) personal beliefs, rather than on scientific research. Maternal misconceptions about the origins of their infant's difficult temperament may contribute not only to their personal stress levels, but also to the view that day care causes problems in the mother-child dyad. This study has demonstrated that it is the combination of difficult infant temperament and placement in day care that results in higher maternal stress. This stress also appears focused around parental feelings of inadequacy. Working mothers need to be reassured that placing their children in day care does not cause them to be difficult, and that they are not to blame for what they interpret incorrectly as their infant's unhappy response to a negative situation. It would be more helpful and productive to assist these mothers in dealing with the real problems in taking care of a difficult child, as she attempts to balance her varied and multiple roles.

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## APPENDIX A



**INFORMED CONSENT FORM**  
**Children's Memorial Hospital**  
**Chicago, Illinois**

I/We for my/our child \_\_\_\_\_ voluntarily agree to participate in this study entitled "Infant Care, Adaptation and Growth" under the direction of Mary Jo Kupst, Ph.D., Elaine Kiriluk, M.A., CCC-Sp., Jerome L. Schulman, M.D., Deborah Holmes, Ph.D., and Mario Natta, B.A. This study is being conducted with the cooperation of

**PURPOSE**

We understand that the purpose of the project is to examine patterns of infant-caregiver interaction which facilitate adaptation and growth. This study will take place over a two year period.

**ROUTINE PROCEDURES**

No changes will be made in the usual activities in the day care center.

**EXPERIMENTAL PROCEDURES**

Parents and infants who are in center day care, parents and infants who are on the waiting list for center care, and parents of infants in the pediatric practice are eligible for inclusion in the study.

In the assessment, all parents will be asked to complete paper and pencil forms, including: a family background sheet; the Infant Temperament Questionnaire; the Parenting Stress Index and The Vineland Adaptive Behavior Scale.

**BENEFITS AND RISKS**

The primary benefit of the study is that we will know more about the ways in which children and caregivers interact and the factors that are important in adaptation and growth in child care. While there is no certain benefit to you, we hope that this research will enable us to learn ways to provide better care. There are not risks which are anticipated.

Whereas no assurance can be made concerning the results that may be obtained (because results from investigational studies cannot be predicted with certainty), the principal investigator and staff will take every precaution consistent with the best medical and psychological practice.

By signing this consent form, I/we understand that my/our child's participation in this study is voluntary. I/We acknowledge that I/we have not waived any of my/our legal rights or released this hospital from liability for negligence.

I/We may revoke my/our consent and withdraw my/our child from this study at any time without penalty or loss of benefits. My/our child's treatment by, and relations with the physician(s) and staff at The Children's Memorial Hospital, now and in the future, will not be affected in any way if I/we refuse to participate, or if I/we enter my/our child into the program and withdraw later. Similarly, participation will not affect my/our relationship and activities with the day care center, nor will it affect waiting list status.

I/We understand that records of this study will be kept confidential with respect to any written or verbal reports making it impossible to identify my/our child individually.

If I/we have any questions about the research procedures, I/we will contact the principal investigator, Dr. Kupst, or the other investigators listed above by calling (312) 830-4832 during a workday or (815) 653-4781 at night or on weekends.

If I/we have any questions about my/our child's rights as a research subject, I/we may take them to the Mr. Steven B. Pulik, Research Administrator, Children's Memorial Institute for Education and Research, 2300 Children's Plaza, Chicago, Illinois 60614, telephone number (312) 830-4987.

I/We have read this informed consent document. I/We understand its contents and I/we freely consent, without force, reward, or promise of reward, to have my/our child participate in this study under the conditions described in this document.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Parent(s) or Guardian(s)  
(identify the signatory)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Witness

• • • • •

I certify that I have explained the above to \_\_\_\_\_ and believe that \_\_\_\_\_ fully understands its contents and that \_\_\_\_\_ signature was (were) affixed freely, without duress, reward, or promise of reward. I also agree to answer any questions which may arise.

Date \_\_\_\_\_ Signed: \_\_\_\_\_  
Title: \_\_\_\_\_

## APPENDIX B

## INFORMED CONSENT FORM

I \_\_\_\_\_ voluntarily agree to participate in this study entitled "Infant Care, Adaptation, and Growth" under the direction of Mary Jo Kupst, Ph.D., Elaine Kiriluk, M.A., Jerome L. Schulman, M.D., Deborah Holmes, Ph.D., and Mario B. Natta, B.A. This study is being conducted with the cooperation of Howard Rice, M.D..

PURPOSE

I understand that the purpose of this study is to examine patterns of infant-mother interaction which facilitate adaptation and growth.

EXPERIMENTAL PROCEDURE

Mothers of infants in the pediatric practice are eligible for inclusion in the study.

Mothers will be asked to complete paper and pencil forms, including: a family background sheet; The Infant Temperament Questionnaire; the Vineland Adaptive Behavior Scale; and the Parenting Stress Index. I understand that records of this study will be kept confidential with respect to any written or verbal reports making it impossible to identify me or my child individually.

BENEFITS AND RISKS

The primary benefit of the study is that we will know more about the factors that are important in the adaptation and growth of infants. There are no risks that are anticipated.

By signing this consent form, I understand that my participation is voluntary and I may revoke my consent at any time. My child's treatment and relations with both the pediatric practice and Children's Memorial Hospital now and in the future will not be affected in any way if I refuse to participate or enter the study and withdraw later.

If I have any questions about the research procedures, I will contact the principle investigator, Dr. Kupst at (815) 653-4781, or the Project Coordinator, Mario Natta at (312) 761-8791.

I have read this informed consent document. I understand its contents and I freely consent, without force, reward, or promise of reward, to participate in this study under the conditions described in this document.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Parent or Guardian  
(identify the signature)

## APPENDIX C

# INFANT TEMPERAMENT QUESTIONNAIRE

revised, 1977

by William B. Carey, M.D., and Sean C. McDevitt, Ph.D.

Child's Name: \_\_\_\_\_ Sex \_\_\_\_\_  
 Date of Birth: \_\_\_\_\_ Present age: \_\_\_\_\_  
 Father's Name: \_\_\_\_\_  
 Relationship to Child: \_\_\_\_\_  
 Date of Rating: \_\_\_\_\_

The purpose of this questionnaire is to determine the general pattern of your infant's reactions to his/her environment. The questionnaire consists of several pages of statements about your infant. Please circle the number indicating the frequency with which you think the statement is true for your infant. Although some of the statements seem to be similar, they are not the same and should be rated independently. If any item cannot be answered or does not apply to your infant, just draw a line through it. If your infant has changed with respect to any of the areas covered, use the response that best describes the recently established pattern. There are no good and bad or right and wrong answers, only descriptions of what your infant does. When you have completed the questionnaire, which will take about 25-30 minutes, you may make any additional comments at the end.

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USING THE FOLLOWING SCALE, PLEASE CIRCLE THE NUMBER THAT INDICATES HOW OFTEN THE INFANT'S RECENT AND CURRENT BEHAVIOR HAS BEEN LIKE THAT DESCRIBED BY EACH ITEM.

Almost never 1	Rarely 2	Variable usually does not 3	Variable usually does 4	Frequently 5	Almost always 6	
1.	The infant eats about the same amount of solid feed (within 1 oz) from day to day.			almost never	1 2 3 4 5 6	almost always
2.	The infant is fussy on waking up and going to sleep (frowns, cries)			almost never	1 2 3 4 5 6	almost always
3.	The infant plays with a toy for under a minute and then looks for another toy or activity.			almost never	1 2 3 4 5 6	almost always
4.	The infant sits still while watching TV or other nearby activity.			almost never	1 2 3 4 5 6	almost always
5.	The infant accepts right away any change in place or position of feeding or person giving it.			almost never	1 2 3 4 5 6	almost always
6.	The infant accepts nail cutting without protest.			almost never	1 2 3 4 5 6	almost always
7.	The infant's hunger cry can be stopped for over a minute by picking up, pacifier, putting on bib, etc.			almost never	1 2 3 4 5 6	almost always
8.	The infant plays continuously for more than 10 min. at a time with a favorite toy.			almost never	1 2 3 4 5 6	almost always
9.	The infant accepts his/her bath any time of the day without resisting it.			almost never	1 2 3 4 5 6	almost always
10.	The infant takes feedings quietly with mild expression of likes and dislikes.			almost never	1 2 3 4 5 6	almost always
11.	The infant indicates discomfort (fusses or squirms) when diaper is soiled with bowel movement.			almost never	1 2 3 4 5 6	almost always
12.	The infant lies quietly in the bath.			almost never	1 2 3 4 5 6	almost always
13.	The infant wants and takes milk feedings at about the same times (within one hour) from day to day.			almost never	1 2 3 4 5 6	almost always

Almost never 1	Rarely 2	Variable usually does not 3	Variable usually does 4	Frequently 5	Almost always 6	
14. The infant is shy (turns away or clings to mother) on meeting another child for the first time.				almost never	1 2 3 4 5 6	almost always
15. The infant continues to fuss during diaper change in spite of efforts to distract him/her with game, toy or singing, etc.				almost never	1 2 3 4 5 6	almost always
16. The infant amuses self for 1/2 hour or more in crib or playpen (looking at mobile, playing with toy).				almost never	1 2 3 4 5 6	almost always
17. The infant moves about much (kicks, grabs, squirms) during diapering and dressing.				almost never	1 2 3 4 5 6	almost always
18. The infant vigorously resists additional food or milk when full (spits out, clamps mouth closed, bats at spoon, etc.)				almost never	1 2 3 4 5 6	almost always
19. The infant resists changes in feeding schedule (1 hour or more) even after two tries.				almost never	1 2 3 4 5 6	almost always
20. The infant's bowel movements come at different times from day to day (over one hour difference).				almost never	1 2 3 4 5 6	almost always
21. The infant stops play and watches when someone walks by.				almost never	1 2 3 4 5 6	almost always
22. The infant ignores voices or other ordinary sounds when playing with a favorite toy.				almost never	1 2 3 4 5 6	almost always
23. The infant makes happy sounds (coos, smiles, laughs) when being diapered or dressed.				almost never	1 2 3 4 5 6	almost always
24. The infant accepts new food right away, swallowing them promptly.				almost never	1 2 3 4 5 6	almost always
25. The infant watches other children playing for under a minute and then looks elsewhere.				almost never	1 2 3 4 5 6	almost always
26. The infant reacts mildly (just blinks or startles briefly) to bright light such as flash bulb or letting sunlight in by pulling up shade.				almost never	1 2 3 4 5 6	almost always



Almost never 1	Barely 2	Variable usually does not 3	Variable usually does 4	Frequently 5	Almost always 6	
27. The infant is pleasant (smiles, laughs) when first arriving in unfamiliar places (friend's house, store).				almost never	1 2 3 4 5 6	almost always
28. The infant gets sleepy at about the same time each evening (within 1/2 hour).				almost never	1 2 3 4 5 6	almost always
29. The infant accepts regular procedures (hair brushing, face washing, etc.) at any time without protest.				almost never	1 2 3 4 5 6	almost always
30. The infant sits still (little squirming) while traveling in car seat or stroller.				almost never	1 2 3 4 5 6	almost always
31. The infant's initial reaction to a new baby sitter is rejection (crying, clinging to mother, etc.).				almost never	1 2 3 4 5 6	almost always
32. The infant keeps at it for many minutes when working on a new skill (rolling over, picking up object, etc.).				almost never	1 2 3 4 5 6	almost always
33. The infant moves much (squirms, bounces, kicks) while lying awake in crib.				almost never	1 2 3 4 5 6	almost always
34. The infant objects to being bathed in a different place or by a different person even after 2 or 3 tries.				almost never	1 2 3 4 5 6	almost always
35. The amount of milk the infant takes at feedings is quite unpredictable (over 2 oz. difference) from feeding to feeding.				almost never	1 2 3 4 5 6	almost always
36. For the first few minutes in a new place or situation (new store or home) the infant is fretful.				almost never	1 2 3 4 5 6	almost always
37. The infant notices (looks carefully at) changes in the appearance or dress (hairdo, unfamiliar clothing) of the mother.				almost never	1 2 3 4 5 6	almost always

Almost never 1	Rarely 2	Variable usually does not 3	Variable usually does 4	Frequently 5	Almost always 6
18. The infant reacts strongly to to foods, whether positively (smacks lips, laughs, squeals) or negatively (cries).				almost never 1 2 3 4 5 6	almost always
19. The infant is pleasant (coos, smiles, etc.) during procedures like hair brushing or face washing.				almost never 1 2 3 4 5 6	almost always
40. The infant continues to cry in spite of several minutes of soothing.				almost never 1 2 3 4 5 6	almost always
41. The infant keeps trying to get a desired toy, which is out of reach, for 2 minutes or more.				almost never 1 2 3 4 5 6	almost always
42. The infant greets a new toy with a loud voice and much expression of feeling (whether positive or negative).				almost never 1 2 3 4 5 6	almost always
43. The infant plays actively with parents - much movement of arms, legs, body.				almost never 1 2 3 4 5 6	almost always
44. The infant watches another toy when offered even though already holding one.				almost never 1 2 3 4 5 6	almost always
45. The infant's initial reaction at home to approach by strangers is acceptance.				almost never 1 2 3 4 5 6	almost always
46. The infant wants daytime naps at differing times (over 1 hour difference) from day to day.				almost never 1 2 3 4 5 6	almost always
47. The infant continues eating solid foods without reacting to differences in taste or consistency.				almost never 1 2 3 4 5 6	almost always
48. The infant cries when left to play alone.				almost never 1 2 3 4 5 6	almost always
49. The infant adjusts within 10 min. to new surroundings (home, store, play area).				almost never 1 2 3 4 5 6	almost always

Almost never 1	Rarely 2	Variable usually does not 3	Variable usually does 4	Frequently 5	Almost always 6	
50. The infant's daytime naps are about the same length from day to day (under one half hour difference).				almost never	1 2 3 4 5 6	almost always
51. The infant moves about much during feedings (squirms, kicks, grabs).				almost never	1 2 3 4 5 6	almost always
52. The infant reacts (stares or startles) to sudden changes in lighting (flash bulbs, turning on light).				almost never	1 2 3 4 5 6	almost always
53. The infant can be soothed by talking or games when sleepy.				almost never	1 2 3 4 5 6	almost always
54. The infant displays much feeling (vigorous laugh or cry) during diapering or dressing.				almost never	1 2 3 4 5 6	almost always
55. The infant lies still when asleep and wakes up in the same place.				almost never	1 2 3 4 5 6	almost always
56. The infant adjusts easily and sleeps well within 1 or 2 days with changes of time or place.				almost never	1 2 3 4 5 6	almost always
57. The infant reacts to changes in temperature or type of milk or substitution of juice.				almost never	1 2 3 4 5 6	almost always
58. The infant watches television for more than 5 minutes at a time.				almost never	1 2 3 4 5 6	almost always
59. The infant can be calmed for a few minutes by being picked up, playing with, T.V., if fussing about soiled diaper.				almost never	1 2 3 4 5 6	almost always
60. The infant <del>wants and takes</del> solid food feedings at about the same time (within 1 hour) from day to day.				almost never	1 2 3 4 5 6	almost always
61. The infant is content (smiles, coos) during interruptions of milk or solid feeding.				almost never	1 2 3 4 5 6	almost always
62. The infant accepts within a few minutes a change in place of bath or person giving it.				almost never	1 2 3 4 5 6	almost always

Almost never 1	Rarely 2	Variable usually does not 3	Variable usually does 4	Frequently 5	Almost always 6	
63. The infant cries for less than one minute when given an injection.				almost never	1 2 3 4 5 6	almost always
64. The infant shows much bodily movement (kicks, waves arms) when crying.				almost never	1 2 3 4 5 6	almost always
65. The infant continues to react to a loud noise (hammering, barking dog, etc.) heard several times in the same day.				almost never	1 2 3 4 5 6	almost always
66. The infant's initial reaction is withdrawal (turns head, spits out) when consistency, flavor or temperature of solid food is changed.				almost never	1 2 3 4 5 6	almost always
67. The infant's time of waking in the morning varies greatly (by 1 hour or more) from day to day.				almost never	1 2 3 4 5 6	almost always
68. The infant continues to reject disliked food or medicine in spite of parents' efforts to distract with games or tricks.				almost never	1 2 3 4 5 6	almost always
69. The infant reacts even to a gentle touch (startle, wiggle, laugh, cry).				almost never	1 2 3 4 5 6	almost always
70. The infant reacts strongly to strangers: laughing or crying.				almost never	1 2 3 4 5 6	almost always
71. The infant actively grasps or touches objects within his/her reach (hair, spoon, glasses, etc.).				almost never	1 2 3 4 5 6	almost always
72. The infant will take any food offered without seeming to notice the difference.				almost never	1 2 3 4 5 6	almost always
73. The infant's period of greatest physical activity comes at same time of day.				almost never	1 2 3 4 5 6	almost always
74. The infant appears bothered (cries, squirms) when first put down in a different sleeping place.				almost never	1 2 3 4 5 6	almost always
75. The infant reacts mildly to meeting familiar people (quiet smiles or no response).				almost never	1 2 3 4 5 6	almost always

Almost never 1	Rarely 2	Variable usually does not 3	Variable usually does 4	Frequently 5	Almost always 6	
76.	The infant is fussy or moody throughout a cold or an intestinal virus.			almost never	1 2 3 4 5 6	almost always
77.	The infant wants an extra feeding at a different time each day (over one hour difference).			almost never	1 2 3 4 5 6	almost always
78.	The infant is still wary or frightened of strangers after 15 minutes.			almost never	1 2 3 4 5 6	almost always
79.	The infant lies still and moves little while playing with toys.			almost never	1 2 3 4 5 6	almost always
80.	The infant can be distracted from fussing or squirming during a procedure (nail cutting, hair brushing, etc.) by a game, singing, T.V., etc.			almost never	1 2 3 4 5 6	almost always
81.	The infant remains pleasant or calm with minor injuries (bumps, pinches)			almost never	1 2 3 4 5 6	almost always
82.	The infant's initial reaction to seeing doctor is acceptance (smiles, coos).			almost never	1 2 3 4 5 6	almost always
83.	The infant reacts to a disliked food even if it is mixed with a preferred one.			almost never	1 2 3 4 5 6	almost always
84.	The infant plays quietly and calmly with toys (little vocalization or other noise).			almost never	1 2 3 4 5 6	almost always
85.	The infant's fussy period occurs at about the same time of day (morning, afternoon or evening).			almost never	1 2 3 4 5 6	almost always
86.	The infant lies still during procedures like hair brushing or nail cutting.			almost never	1 2 3 4 5 6	almost always
87.	The infant stops sucking and looks away when he/she hears an unusual noise (telephone, door bell) when drinking.			almost never	1 2 3 4 5 6	almost always
88.	The infant pays attention to game with parent for only a minute or so.			almost never	1 2 3 4 5 6	almost always

Almost never 1	Rarely 2	Variable usually does not 3	Variable usually does 4	Frequently 5	Almost always 6	
89.	The infant is calm in the bath. Like or dislike is mildly expressed (smiles or frowns).			almost never	1 2 3 4 5 6	almost always
90.	The infant requires introduction of a new food on 3 or more occasions before he/she will accept (swallow) it.			almost never	1 2 3 4 5 6	almost always
91.	The infant's first reaction to any new procedure (first haircut, new medicine, etc.) is objection.			almost never	1 2 3 4 5 6	almost always
92.	The infant acts the same when the diaper is wet as when it is dry. (no reaction)			almost never	1 2 3 4 5 6	almost always
93.	The infant is fussy or cries during the physical examination by the doctor.			almost never	1 2 3 4 5 6	almost always
94.	The infant accepts changes in solid food feeding (type, amount, timing) within 1 or 2 tries.			almost never	1 2 3 4 5 6	almost always
95.	The infant moves much and for several minutes or more when playing by self (kicking, waving arms and bouncing).			almost never	1 2 3 4 5 6	almost always

Additional Comments

## APPENDIX D

## PARENTING STRESS INDEX (FSI)

## Administration Booklet

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## Directions:

Please answer the following questions in regards to your infant.

The questions on the following pages ask you to mark an answer which best describes your feelings. While you may not find an answer which exactly states your feelings, please mark the answer which comes closest to describing how you feel. YOUR FIRST REACTIONS TO EACH QUESTION SHOULD BE YOUR ANSWER.

Please mark the degree to which you agree or disagree with the following statements by filling in the number which best matches how you feel. If you are not sure, please fill in #3.

1  
Strongly  
Agree

2  
Agree

3  
Not  
Sure

4  
Disagree

5  
Strongly  
Disagree

Example: 1    (2)    3    4    5    I enjoy going to the movies. (if you sometimes enjoy going to the movies, you would fill in #2.)



PLEASE MARK THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY FILLING IN THE NUMBER WHICH BEST MATCHES HOW YOU FEEL. IF YOU ARE NOT SURE, PLEASE FILL IN #3.

	1 Strongly Agree	2 Agree	3 Not Sure	4 Disagree	5 Strongly Disagree	
1. When my child wants something, my child usually keeps trying to get it.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
2. My child is so active that it exhausts me.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
3. My child appears disorganized and is easily distracted.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
4. Compared to most, my child has more difficulty concentrating and paying attention.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
5. My child will often stay occupied with a toy for more than 10 minutes.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
6. My child wanders away much more than I expected.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
7. My child is much more active than I expected.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
8. My child squirms and kicks a great deal when being dressed or bathed.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
9. My child can be easily distracted from wanting something.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
10. My child rarely does things for me that make me feel good.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
11. Most times I feel that my child likes me and wants to be close to me.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
12. Sometimes I feel my child doesn't like me and doesn't want to be close to me.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
13. My child smiles at me much less than I expected.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
14. When I do things for my child I get the feeling that my efforts are not appreciated very much.			Strongly Agree	1 2 3 4 5	Strongly Disagree	

PLEASE MARK THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY FILLING IN THE NUMBER WHICH BEST MATCHES HOW YOU FEEL. IF YOU ARE NOT SURE, PLEASE FILL IN #3.

	1 Strongly Agree	2 Agree	3 Not Sure	4 Disagree	5 Strongly Disagree
15. Which statement best describes your child?					
1. almost always likes to play with me,					
2. sometimes likes to play with me,					
4. usually doesn't like to play with me,					
5. almost never likes to play with me.					
16. My child cries and fusses:					
1. much less than I had expected,					
2. less than I expected,					
3. about as much as I expected,					
4. much more than I expected,					
5. it seems almost constant.					
17. My child seems to cry or fuss more often than most children.	Strongly Agree			1 2 3 4 5	Strongly Disagree
18. When playing, my child doesn't often giggle or laugh.	Strongly Agree			1 2 3 4 5	Strongly Disagree
19. My child generally wakes up in a bad mood.	Strongly Agree			1 2 3 4 5	Strongly Disagree
20. I feel that my child is very moody and easily upset.	Strongly Agree			1 2 3 4 5	Strongly Disagree
21. My child looks a little different than I expected and it bothers me at times.	Strongly Agree			1 2 3 4 5	Strongly Disagree
22. In some areas my child seems to have forgotten past learnings and had gone back to doing things characteristic of younger children.	Strongly Agree			1 2 3 4 5	Strongly Disagree
23. My child doesn't seem to learn as quickly as most children.	Strongly Agree			1 2 3 4 5	Strongly Disagree
24. My child doesn't seem to smile as much as most children.	Strongly Agree			1 2 3 4 5	Strongly Disagree
25. My child does a few things which bother me a great deal.	Strongly Agree			1 2 3 4 5	Strongly Disagree
26. My child is not able to do as much as I expected.	Strongly Agree			1 2 3 4 5	Strongly Disagree
27. My child does not like to be cuddled or touched very much.	Strongly Agree			1 2 3 4 5	Strongly Disagree

PLEASE MARK THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY FILLING IN THE NUMBER WHICH BEST MATCHES HOW YOU FEEL. IF YOU ARE NOT SURE, PLEASE FILL IN #3.

	1 Strongly Agree	2 Agree	3 Not Sure	4 Disagree	5 Strongly Disagree	
28. When my child came home from the hospital, I had doubtful feelings about my ability to handle being a parent.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
29. Being a parent is harder than I thought it would be.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
30. I feel capable and on top of things when I am caring for my child.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
31. Compared to the average child, my child has a great deal of difficulty in getting used to changes in schedules or changes around the house.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
32. My child reacts very strongly when something happens that my child doesn't like.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
33. Leaving my child with a babysitter is usually a problem.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
34. My child gets upset easily over the smallest thing.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
35. My child easily notices and overreacts to loud sounds and bright lights.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
36. My child's sleeping or eating schedule was much harder to establish than I expected.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
37. My child usually avoids a new toy for a while before beginning to play with it.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
38. It takes a long time and it is very hard for my child to get used to new things.			Strongly Agree	1 2 3 4 5	Strongly Disagree	
39. My child doesn't seem comfortable when meeting strangers.			Strongly Agree	1 2 3 4 5	Strongly Disagree	

PLEASE MARK THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY FILLING IN THE NUMBER WHICH BEST MATCHES HOW YOU FEEL. IF YOU ARE NOT SURE, PLEASE FILL IN #3.

1	2	3	4	5
Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree

40. When upset, my child is:

1. easy to calm down,
2. harder to calm down than I expected,
4. very difficult to calm down,
5. nothing I do helps to calm my child.

41. I have found that getting my child to do something or stop doing something is:

1. much harder than I expected
2. somewhat harder than I expected,
3. about as hard as I expected,
4. somewhat easier than I expected,
5. much easier than I expected.

42. Think carefully and count the number of things which your child does that bothers you. For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc. Please fill in the number which includes the number of things you counted.

1. 1-3
2. 4-5
3. 6-7
4. 8-9

5. 10+

43. When my child cries it usually lasts:

1. less than 2 minutes,
2. 2-5 minutes,
3. 5-10 minutes,
4. 10-15 minutes,
5. more than 15 minutes.

44. There are some things my child does that really bothers me a lot.	Strongly Agree	1	2	3	4	5	Strongly Disagree
45. My child has had more health problems than I expected.	Strongly Agree	1	2	3	4	5	Strongly Disagree
46. As my child has grown older and become more independent, I find myself more worried that my child will get hurt or into trouble.	Strongly Agree	1	2	3	4	5	Strongly Disagree
47. My child turned out to be more of a problem than I had expected.	Strongly Agree	1	2	3	4	5	Strongly Disagree
48. My child seems to be much harder to care for than most.	Strongly Agree	1	2	3	4	5	Strongly Disagree

PLEASE MARK THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY FILLING IN THE NUMBER WHICH BEST MATCHES HOW YOU FEEL. IF YOU ARE NOT SURE, PLEASE FILL IN #3.

- |   | 1<br>Strongly<br>Agree | 2<br>Agree | 3<br>Not<br>Sure | 4<br>Disagree | 5<br>Strongly<br>Disagree |
|---|------------------------|------------|------------------|---------------|---------------------------|
| 49. My child is always handing on me.   | Strongly<br>Agree      |            |                  |               | Strongly<br>Disagree      |
| 50. My child makes more demands on me than most children.   | Strongly<br>Agree      |            |                  |               | Strongly<br>Disagree      |
| 51. I can't make decisions without help.  | Strongly<br>Agree      |            |                  |               | Strongly<br>Disagree      |
| 52. I have had many more problems raising children than I expected.   | Strongly<br>Agree      |            |                  |               | Strongly<br>Disagree      |
| 53. I enjoy being a parent.   | Strongly<br>Agree      |            |                  |               | Strongly<br>Disagree      |
| 54. I feel that I am successful most of the time when I try to get my child to do or not do something.  | Strongly<br>Agree      |            |                  |               | Strongly<br>Disagree      |
| 55. Since I brought my last child home from the hospital, I find that I am not able to take care of this child as well as I thought I could. I need help. | Strongly<br>Agree      |            |                  |               | Strongly<br>Disagree      |
| 56. I often have the feeling that I cannot handle things very well.   | Strongly<br>Agree      |            |                  |               | Strongly<br>Disagree      |
| 57. When I think about myself as a parent I believe:  |                        |            |                  |               |                           |
| 1. I can handle anything that happens,  |                        |            |                  |               |                           |
| 2. I can handle most things pretty well,  |                        |            |                  |               |                           |
| 3. sometimes I have doubts, but find that I handle most things without any problems,  |                        |            |                  |               |                           |
| 4. I have some doubts about being able to handle things,  |                        |            |                  |               |                           |
| 5. I don't think I handle things very well at all.  |                        |            |                  |               |                           |
| 58. I feel that I am:   |                        |            |                  |               |                           |
| 1. a very good parent,  |                        |            |                  |               |                           |
| 2. a better than average parent,  |                        |            |                  |               |                           |
| 3. an average parent,   |                        |            |                  |               |                           |
| 4. a person who has some trouble being a parent,  |                        |            |                  |               |                           |
| 5. not very good at being a parent.   |                        |            |                  |               |                           |
| 59. What were the highest levels in school or college you and the child's father/mother have completed?   |                        |            |                  |               |                           |
| Mother:   |                        |            |                  |               |                           |
| 1. 1-8th grade  |                        |            |                  |               |                           |
| 2. 9-12th grade   |                        |            |                  |               |                           |
| 3. Vocational or some college   |                        |            |                  |               |                           |
| 4. College graduate   |                        |            |                  |               |                           |
| 5. Graduate or professional school  |                        |            |                  |               |                           |

PLEASE MARK THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY FILLING IN THE NUMBER WHICH BEST MATCHES HOW YOU FEEL. IF YOU ARE NOT SURE, PLEASE FILL IN #3.

1	2	3	4	5
Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree

60. Father:

1. 1-8th grade
2. 9-12th grade
3. Vocational or some college
4. College graduate
5. Graduate or professional school

61. How easy is it for you to understand what your child wants or needs?

1. very easy,
2. easy,
3. somewhat difficult,
4. it is very hard,
5. I usually can't figure out what the problem is.

- |   |                   |   |   |   |   |   |                      |
|---|-------------------|---|---|---|---|---|----------------------|
| 62. It takes a long time for parents to develop close, warm feelings for their children.      | Strongly<br>Agree | 1 | 2 | 3 | 4 | 5 | Strongly<br>Disagree |
| 63. I expected to have closer and warmer feelings for my child than I do and this bothers me. | Strongly<br>Agree | 1 | 2 | 3 | 4 | 5 | Strongly<br>Disagree |
| 64. Sometimes my child does things that bother me just to be mean.                            | Strongly<br>Agree | 1 | 2 | 3 | 4 | 5 | Strongly<br>Disagree |
| 65. When I was young, I never felt comfortable holding or taking care of children.            | Strongly<br>Agree | 1 | 2 | 3 | 4 | 5 | Strongly<br>Disagree |
| 66. My child knows I am his or her parent and wants me more than other people.                | Strongly<br>Agree | 1 | 2 | 3 | 4 | 5 | Strongly<br>Disagree |
| 67. The number of children that I now is too many.  | Strongly<br>Agree | 1 | 2 | 3 | 4 | 5 | Strongly<br>Disagree |
| 68. Most of my life is spent doing things for my child.                                       | Strongly<br>Agree | 1 | 2 | 3 | 4 | 5 | Strongly<br>Disagree |
| 69. I find myself giving up more of my life to meet by children's needs than I ever expected. | Strongly<br>Agree | 1 | 2 | 3 | 4 | 5 | Strongly<br>Disagree |
| 70. I feel trapped by my responsibilities as a parent.  | Strongly<br>Agree | 1 | 2 | 3 | 4 | 5 | Strongly<br>Disagree |
| 71. I often feel that my child's needs control my life.                                       | Strongly<br>Agree | 1 | 2 | 3 | 4 | 5 | Strongly<br>Disagree |

PLEASE MARK THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY FILLING IN THE NUMBER WHICH BEST MATCHES HOW YOU FEEL. IF YOU ARE NOT SURE, PLEASE FILL IN #3.

	1 Strongly Agree	2 Agree	3 Not Sure	4 Disagree	5 Strongly Disagree	
72. Since having this child I have been unable to do new and different things.			Strongly Agree	1 2 3 4 5		Strongly Disagree
73. Since having a child I feel that I am almost never able to do things that I like to do.			Strongly Agree	1 2 3 4 5		Strongly Disagree
74. It is hard to find a place in our home where I can go to be by myself.			Strongly Agree	1 2 3 4 5		Strongly Disagree
75. When I think about the kind of parent I am, I often feel guilty or bad about myself.			Strongly Agree	1 2 3 4 5		Strongly Disagree
76. I am unhappy with the last purchase of clothing I made for myself.			Strongly Agree	1 2 3 4 5		Strongly Disagree
77. When my child misbehaves or fusses too much I feel responsible, as if I didn't do something right.			Strongly Agree	1 2 3 4 5		Strongly Disagree
78. I feel every time my child does something wrong it is really my fault.			Strongly Agree	1 2 3 4 5		Strongly Disagree
79. I often feel guilty about the way I feel towards my child.			Strongly Agree	1 2 3 4 5		Strongly Disagree
80. There are quite a few things that bother me about my life.			Strongly Agree	1 2 3 4 5		Strongly Disagree
81. I felt sadder and more depressed than I expected after leaving the hospital with my baby.			Strongly Agree	1 2 3 4 5		Strongly Disagree
82. I wind up feeling guilty when I get angry at my child and this bothers me.			Strongly Agree	1 2 3 4 5		Strongly Disagree
83. After my child had been home from the hospital for about a month, I noticed that I was feeling more sad and depressed than I had expected.			Strongly Agree	1 2 3 4 5		Strongly Disagree

PLEASE MARK THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY FILLING IN THE NUMBER WHICH BEST MATCHES HOW YOU FEEL. IF YOU ARE NOT SURE, PLEASE FILL IN #3.

	1 Strongly Agree	2 Agree	3 Not Sure	4 Disagree	5 Strongly Disagree			
84.	Since having my child, my spouse (male/female friend) has not given me as much help and support as I expected.	Strongly Agree	1	2	3	4	5	Strongly Disagree
85.	Having a child has caused more problems than I expected in my relationship with my spouse (male/female friend).	Strongly Agree	1	2	3	4	5	Strongly Disagree
86.	Since having a child my spouse (or male/female friend) and I don't do as many things together.	Strongly Agree	1	2	3	4	5	Strongly Disagree
87.	Since having my child, my spouse (or male/female friend) and I don't spend as much time together as a family as I had expected.	Strongly Agree	1	2	3	4	5	Strongly Disagree
88.	Since having my last child, I have less interest in sex.	Strongly Agree	1	2	3	4	5	Strongly Disagree
89.	Having a child seems to have increased the number of problems we have with in-laws and relatives.	Strongly Agree	1	2	3	4	5	Strongly Disagree
90.	Having children has been much more expensive than I had expected.	Strongly Agree	1	2	3	4	5	Strongly Disagree
91.	I feel alone and without friends.	Strongly Agree	1	2	3	4	5	Strongly Disagree
92.	When I go to a party I usually expect not to enjoy myself.	Strongly Agree	1	2	3	4	5	Strongly Disagree
93.	I am not as interested in people as I used to be.	Strongly Agree	1	2	3	4	5	Strongly Disagree
94.	I often have the feeling that other people my own age don't particularly like my company.	Strongly Agree	1	2	3	4	5	Strongly Disagree
95.	When I run into a problem taking care of my children I have a lot of people to whom I can talk to get help or advice.	Strongly Agree	1	2	3	4	5	Strongly Disagree



PLEASE MARK THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS BY FILLING IN THE NUMBER WHICH BEST MATCHES HOW YOU FEEL. IF YOU ARE NOT SURE, PLEASE FILL IN #3.

	1 Strongly Agree	2 Agree	3 Not Sure	4 Disagree	5 Strongly Disagree
96. Since having children I have a lot fewer chances to see my friends and to make new friends.	Strongly Agree			1 2 3 4 5	Strongly Disagree
97. During the past six months I have been sicker than usual or have had more aches and pains than I normally do.	Strongly Agree			1 2 3 4 5	Strongly Disagree
98. Physically, I feel good most of the time.	Strongly Agree			1 2 3 4 5	Strongly Disagree
99. Having a child has caused changes in the way I sleep.	Strongly Agree			1 2 3 4 5	Strongly Disagree
100. I don't enjoy things as I used to.	Strongly				Strongly
101. Since I've had my child:					
1. I have been sick a great deal,					
2. I haven't felt as good,)					
4. I haven't noticed any change in my health,					
5. I have been healthier.					

During the last 12 months, have any of the following events occurred in your immediate family?

102. Divorce	YES _____	NO _____
103. Marital reconciliation	YES _____	NO _____
104. Marriage	YES _____	NO _____
105. Separation	YES _____	NO _____
106. Pregnancy	YES _____	NO _____
107. Other relative moved into household	YES _____	NO _____
108. Income increased substantially (20% or more)	YES _____	NO _____
109. Went deeply into debt	YES _____	NO _____
110. Moved to new location	YES _____	NO _____
111. Promotion at work	YES _____	NO _____

During the last 12 months, have any of the following events occurred in your immediate family?

112. Income decreased substantially	YES _____	NO _____
113. Alcohol or drug problem	YES _____	NO _____
114. Death of close family friend	YES _____	NO _____
115. Began new job	YES _____	NO _____
116. Entered new school	YES _____	NO _____
117. Trouble with superiors at work	YES _____	NO _____
118. Trouble with teachers at school	YES _____	NO _____
119. Legal problem	YES _____	NO _____
120. Death of immediate family member	YES _____	NO _____

## APPENDIX E

Please fill in the following information:

Infant Sex ☐ M ☐ F

Infant Age \_\_\_\_\_

Infant age at entry into day care \_\_\_\_\_ (weeks)

Number of children (including this infant) \_\_\_\_\_ # in day care \_\_\_\_\_

Birth order of this infant \_\_\_\_\_

Your Age:

☐ Under 18    ☐ 18-21    ☐ 22-29    ☐ 30-39  
☐ 40-49    ☐ 50-59    ☐ Over 60

Patner's Age:

☐ Under 18    ☐ 18-21    ☐ 22-29    ☐ 30-39  
☐ 40-49    ☐ 50-59    ☐ Over 60    ☐ No Spouse

Your Marital Status:

☐ Married    ☐ Divorced    ☐ Widow/Widower  
☐ Never Married    ☐ Separated

Yearly Family Income: (optional)

☐ Below \$5,000    ☐ 5,000 - 10,000  
☐ 10,000 - 20,000    ☐ 20,000 - 30,000  
☐ 30,000 - 40,000    ☐ 40,000 - 50,000  
☐ 50,000 - 60,000    ☐ Over 60,000

Your Ethnic Background:

☐ Caucasian    ☐ Black    ☐ Hispanic  
☐ Oriental    ☐ Other \_\_\_\_\_

Your Education:

☐ Below 8th Grade    ☐ Some High School  
☐ High School Graduate    ☐ Some College  
☐ Bachelor's Degree    ☐ Master's Degree  
☐ Doctoral Degree    ☐ Vocational or Technical

Your Spouse's Education:

☐ Below 8th Grade    ☐ Some High School  
☐ High School Graduate    ☐ Some College  
☐ Bachelor's Degree    ☐ Master's Degree  
☐ Doctoral Degree    ☐ Vocational or Technical

Your Occupation:

\_\_\_\_\_

Your Spouse's Occupation:

\_\_\_\_\_

APPROVAL SHEET

The thesis submitted by Mario B. Natta has been read and approved by the following committee:

Dr. Deborah Holmes, Director  
Professor, Psychology, Loyola

Dr. Mary Jo Kupst  
Professor, Psychology, Wisconsin Medical College

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

12/11/90  
Date

Deborah L. Holmes  
Director's Signature