

379  
N81  
No. 4658

A CORRELATIONAL ANALYSIS OF MATERNAL WARMTH  
AND INFANT MENTAL DEVELOPMENT

THESIS

Presented to the Graduate Council of the  
North Texas State University in Partial  
Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

By

Carol A. Schieffer, B. S. N.

Denton, Texas

May, 1973

DMC

Schieffer, Carol, A Correlational Analysis of Maternal Warmth and Infant Mental Development. Master of Science (Clinical Psychology), May, 1973, 28 pp., 5 tables, references, 35 titles.

This study was concerned with investigating the relationship between (1) infant development and mother warmth, (2) infant development and maternal grandmother warmth.

The sample utilized were thirty infants, sixteen males and fourteen females, between the ages of five months and thirty months. These infants had been evaluated for an infant stimulation program at the Child Study Center in Fort Worth, Texas, and were referred to the Center by either private physicians, public health nurses, or the welfare department. The criteria for referral to the stimulation program was simply an hypothesized "developmental lag" by the referring person. The infant sample came from homes with a mean monthly income of approximately \$437.00. Fourteen of the mothers were receiving some form of public assistance; five were from middle class socio-economic status families.

Three instruments were employed in this study. The Bayley Scale of Infant Development (BSID) provided a

measure of mental development on each infant. The Roe-Siegelman Parent-Child Relations Questionnaire (PCR) was administered to all the mothers and provided a measure of the characteristic pattern of behavior of parents towards their children as perceived by the child. The mothers answered the questions in relation to how they felt their mothers reacted towards them prior to the age of twelve. The warmth scale adapted from the Barrett-Lennard Relationship Inventory (B-L) was completed by a social worker employed by the Center on each mother in order to obtain a rating of maternal warmth between mother and infant. It was hypothesized that (1) the degree of mother warmth as measured on the Barrett-Lennard warmth subscale was significantly related to the level of mental development of her infant; (2) a significant relationship existed between the mother's perceived warmth of the maternal grandmother and the mental development of the infant; (3) there was a significant relationship between the perceived warmth of the maternal grandmother and the measured warmth of the mother.

None of the three hypotheses were supported by the results. The hypothesis of a relationship between mental development of the infant and the warmth of the infant ( $r = .12, p > .05$ ) was rejected. The magnitude of the relationship between the mother's perceived warmth of the

maternal grandmother and the measured warmth of the mother ( $r = .31, p > .05$ ) was not significant. The hypothesis of a significant relationship between perceived grandmother warmth and the mental development of the infant was not supported ( $r = .15, p > .05$ ). Various subscales of the PCR indicated significant relationships with the BSID. Symbolic Love Reward and BSID raw score and developmental age were significantly related ( $r = -.43, p < .05$ ). Direct Object Punishment and the BSID raw score were significantly related ( $r = -.36, p < .05$ ), as were Direct Object Reward and the BSID raw score and developmental age ( $r = -.41, p < .05$ ). The Neglecting subscale and the BSID raw score were significantly related ( $r = -.41, p < .05$ ).

TABLE OF CONTENTS

	Page
LIST OF TABLES . . . . .	iv
Chapter	
I. STATEMENT OF PROBLEM AND REVIEW OF LITERATURE . . . . .	1
II. METHOD . . . . .	8
Subjects	
Instruments	
III. RESULTS . . . . .	15
IV. DISCUSSION . . . . .	19
APPENDIX . . . . .	23
REFERENCES . . . . .	26

## LIST OF TABLES

Table	Page
1. Means, Standard Deviations, and Reliability Estimates for Ten Parent-Child Relations Scales . . . . .	11
2. Means, Standard Deviations, and Reliability Estimates for Warmth Subscale of Adapted Barrett-Lennard Relationship Inventory . . .	13
3. Relationship of Parent-Child Relations Inventory Subscale with the Adapted Barrett-Lennard Relationship Inventory, Bayley Scale of Infant Development Raw Score, Mental Development Index, and Developmental Age . . . . .	16
4. Means and Standard Deviations of the Bayley Scale of Infant Development Raw Score, Mental Developmental Index, and Developmental Age of Child Study Sample . . . . .	17
5. Means and Standard Deviations and <i>t</i> Scores on the Parent Child Relations Inventory Subscales for the Child Study Sample and Adult Female Sample in Roe-Siegelman Study . . . . .	18

## CHAPTER I

### STATEMENT OF PROBLEM AND REVIEW OF LITERATURE

There is much interest concerning the effects of "mothering" and general infant development, but the various hypotheses propounded appear to have been only partially documented (Bayley, 1940; Bayley & Schaeffer, 1964; Moss, 1970). Research reported later in this study seems to stress the importance of various maternal variables and their effect on the appropriate development of infants. Thus, the developmental tasks of toilet training and identification are more readily accomplished by a warm and loving mother as are problems associated with feeding than by an emotionally cool and distant mother. There seems to be conflicting evidence regarding the importance of mother warmth as a significant variable in the mental development of infants.

There is also some evidence which suggests that child rearing practices are handed down from mother to daughter, which seems highly probable if one adheres to a learning theory model of growth and development.

The present study attempted to determine whether relationships exist between the mental development of

infants and the measured warmth of their mother, and between mental development of infants and the mother's perceived warmth of the maternal grandmother. This study also examined the relationship between the perceived warmth of the maternal grandmother and the measured warmth of the mother.

Caldwell (1971) credits Rene Spitz with launching the "maternal deprivation" decade in the late 1940's. Spitz conducted extensive research investigating the significant variables in infant development and concluded that the importance of a conducive emotional relationship between a mother and her infant could not be overstressed. The fact that childhood is the most critical time in a person's life for this emotional relationship with one's mother was reemphasized in a more recent study (Spitz, 1960). In this study, Spitz conducted research on two institutions that cared for infants. They differed in that the infants in the "Nursery" were raised by their own "mothers" while in the other institution, the "Foundlinghouse," the infants were raised by over-burdened nursing personnel from the third month of life. The independent variable then was the availability of emotional interchange between each child and his "mother." All infants in the study were admitted to the "Nursery" or "Foundlinghouse" shortly after birth. The results over a two-year period were quite startling. The "Nursery" group developed into normal



toddlers, whereas the "Foundlinghouse" group showed that the emotionally starved children never learned to speak, to walk, or to feed themselves. The mortality rate in the "Nursery" was zero, while in the "Foundlinghouse" 37 per cent of the infants died within two years. This would certainly seem to demonstrate the notable affects of maternal deprivation. These results reaffirmed Spitz's earlier findings concerning an infant's need for a conducive emotional relationship with its mother; thus he comments, "barring starvation, or actual physical injury, no factor is capable of so influencing the child's development as is his relation to his mother (Spitz, 1960, p. 170)." Spitz's results initially received unchallenged acceptance but were later subjected to a devastating series of critical articles (McCandless, 1961). Pinneau (1955a, 1955b), one of the major critics, objected to some of the statistical procedures Spitz employed. One big discrepancy appears to lie in the fact that one institution was located in the United States while the other was not; consequently the groups would differ significantly in ethnic and socioeconomic background. Thus Pinneau concludes that Spitz's studies cannot be accepted as scientific evidence supporting the hypothesis that institutional infants develop psychological disorders as the result of being separated from their mothers. However, it should be remembered that even though Spitz's research was not scientifically sound, he

provided an invaluable contribution to society by calling attention to the "mothering" need of infants.

Dennis and Najarian (1960) investigated the affects of "mothering" on children in a Lebanon orphanage and reported less drastic but more selective affects than Spitz. Dennis does not support the concept of the permanency of early environmental effects, but rather suggests that specific environmental factors may be more or less important. Thus he notes that differences between four year olds from the same institution regarding performance on the "Draw-A-Person" test, were likely accounted for by the nurse assigned to the supervision of one group. She provided them with free access to paper, pencils and other stimulating materials whereas the nurse assigned to the group who scored lower did not. Harlow (1960) lends support to Spitz's work and suggests that other variables besides warmth might be studied. Bowlby (1952, as cited in McCandless, 1961) reviewed the literature available in the area of maternal deprivation and concluded that, before the age of three, any severe maternal deprivation would result in faulty personality development. Follow-up research by Bowlby (1956, as cited in McCandless, 1961) failed to support this conclusion.

Sears, Maccoby, and Levin's (1957) extensive investigation of 379 American mothers supports the importance of maternal warmth for the developing infant. They cited

findings that maternal warmth was a critical factor in preventing emotional problems associated with feeding and toilet training. Maternal coolness was connected with, among others, development of persistent bed wetting, high aggression, slowness of conscience development, and feeding problems. Sears et al. hypothesized that the reason maternal warmth had such a wide range affect was that warm mothers spend more time with their children and offer more rewards.

Greenberg and Hurley (1970) reported findings from questionnaires, projective tests, and clinical interviews which appeared rather consistent and suggested that mothers of infants with atypical behavior (for example, excessive crying) for the most part were distant, apathetic, withdrawn, and impoverished. High degrees of empathy and closeness were not perceived in these mothers. Other studies support the recent emphasis placed on maternal influences as being critical in a child's development (Becker, 1960; Hetherington & Frankie, 1970; Peterson, Becker, Hellmer, Shoemaker, & Quay, 1959; Peterson, Becker, Shoemaker, Luria, & Hellmer, 1961; Siegelman, 1965).

What leads a mother to use one method of child-rearing rather than another? Sears, Maccoby, and Levin (1957) support the view that child-rearing beliefs and practices are the products of the mother's own personality, her values and attitudes that she has developed throughout

her own life. They also support the belief that in addition to a mother's personality, culturally determined attitudes influence child-rearing practices. An example of the above is that mothers are more tolerant of aggression in sons than in daughters. Jersild (1968) supports the notion that when a mother goes to her child, she brings with her all that she embodies as a person. Her attitudes and personality determine the manner in which she administers to her child. Jersild concludes that "love is likely to be most effective when a parent not only accepts his child but can also accept himself (p. 200)." Thus it can be inferred that a rejecting mother brings sadness and misfortune into her child's life but this rejection is rooted in sadness and misfortune in her own life. Greenberg and Hurley (1971) report findings that substantiate this view. They noted that mothers with infants who displayed atypical behavior were themselves distant, apathetic, withdrawn, and were without the qualities of empathy and closeness. Caldwell (1964) states that underlying parental attitudes may influence not only the choice of a specific parental practice, but may also interfere with decision making when personal needs challenge the wisdom of the choice. Moss (1970), in a study in which he controlled for the state of the infant, was able to demonstrate the affects of pre-parental attitudes on the mother's responsiveness toward her infant.

This study was designed to investigate the significance of mother warmth and infant mental development. It was hypothesized that (1) the degree of mother warmth as measured on the Barrett-Lennard warmth subscale was significantly related to the level of mental development of her infant; (2) a significant relationship existed between the mother's perceived warmth of the maternal grandmother and the mental development of the infant; (3) there was a significant relationship between the perceived warmth of the maternal grandmother and the measured warmth of the mother.

## CHAPTER II

### METHOD

#### Subjects

The Ss consisted of 30 infants, 16 males and 14 females, from five months to thirty months of age. They were either participants in or evaluated for the "Infant Stimulation Program" at the Child Study Center in Fort Worth, Texas, and were referred to the Child Study Center by either private physicians, public health nurses, or the welfare department. The criterion for referral to the stimulation program was simply an hypothesized "developmental lag" by the referring person. No other criteria for selection were noted or suggested. The infant sample came from homes with a mean monthly income of \$473.00. Fourteen of the mothers were receiving some form of public assistance; five were from middle class socio-economic status families.

#### Instruments

The three instruments employed in this study were the Bayley Scales of Infant Development (Bayley, 1969), the Roe-Siegelman Parent-Child Relations Questionnaire (Roe & Siegelman, 1963) and the warmth scale adapted from the Barrett-Lennard Relationship Inventory (Barrett-Lennard, 1969)

given to each mother by the social worker employed by the Child Study Center.

The Bayley Scales of Infant Development (BSID) was designed to measure the relative levels of mental, physical, and social development of infants. This study utilized only the Mental Development Index (MDI). This instrument's reliability has been established with the total score reliabilities of the Scales for 108 eight-month-old infants ranging from .79 to .94 (Werner & Bayley, 1966). Bayley (1969) conducted a correlational study between the MDI and the IQ obtained on the Stanford-Binet Intelligence Scale. Of the 350 children tested, only 120 aged 24, 27, and 30 months achieved basal scores on the Stanford-Binet. A correlation of .57 was reported between the MDI and the Stanford-Binet IQ. Bayley reported that the value of the BSID lies not in predicting a child's later abilities, but in establishing his current developmental status in relation to others his age. It is an excellent research instrument because of its thorough standardization, high reliability and its comprehensive coverage of infant behavior (Buros, 1972). The BSID was administered to all infants by a psychologist as part of the evaluation procedure for the "Infant Stimulation Program."

The Roe-Siegelman Parent-Child Relations Questionnaire (PCR) "was designed to obtain a measure of the characteristic behavior of parents towards their young children as

experienced by the child (Roe & Siegelman, 1963)." This questionnaire consists of six subscales measuring the parental behavior characterized as Loving, Protecting, Demanding, Rejection, Neglecting, and Casual. There were also four subscales for Symbolic Love Punishment, Symbolic Love Reward, Direct Object Reward, and Direct Object Punishment. In addition to the ten scores provided for the PCR, a derived score on a dimension of Loving-Rejection (L-R) was obtained. This score was comprised of the unweighted composite of the Loving minus the sum of Rejecting and Neglecting scales. High scores on L-R were expected to measure perceived maternal warmth (warm, loving, and affectionate) and low scores to measure perceived maternal coolness (cold, rejecting, and neglecting). The internal consistency reliabilities together with means and standard deviations, for the ten PCR scales for this sample of mothers is reported in Table 1.

Reliabilities on this instrument were reported by Roe and Siegelman (1963, pp. 358-359) as ranging from .75 to .87 for the 142 men in their sample. The PCR was administered to all the mothers. The questions were read to the mothers who followed the question on their own question sheet and then answered them on a separate answer sheet. The mothers were instructed to answer each question in reference to how it described how her mother acted towards her when she was growing up, especially before the age of twelve.



TABLE 1

Means, Standard Deviations and Reliability  
Estimates for Ten Parent-Child  
Relations Subscales

Parent-child relations scale	Mean	Standard deviation	Reliability
Protecting	48.83	8.74	.78
Symbolic Love Punishment	29.60	5.46	.66
Rejecting	35.93	9.97	.89
Casual	41.53	7.21	.70
Symbolic Love Reward	36.67	4.62	.64
Demanding	50.63	8.87	.82
Direction Object Punishment	29.77	6.04	.70
Loving	56.63	9.17	.90
Neglecting	31.57	9.16	.85
Direct Object Reward	30.60	5.98	.73

An adaptation of the Barrett-Lennard Relationship Inventory (1969) (B-L) was used to measure maternal warmth toward the infant. The B-L was designed to provide measurement scales for the response variables of empathy, warmth, and genuineness in any significant inter-personal relationship (Barrett-Lennard, 1962). The sixteen items in the 1964 revision of the scale purporting to measure the

response variable of "warmth" were selected and adapted for the purpose of measuring maternal warmth toward the infant. The adaptation consisted of introducing the term "her child" in place of the term "me." Thus item one was changed from "She respects me as a person" to read as follows: "She respects her child as a person." The sixteen items consisted of eight positive statements and eight negative statements relating to communicated warmth. Each item was rated on a six point scale ranging from "definitely true" to "definitely not true." In scoring the positive items, the scale ranged from the "definitely true" (a plus 3) to "definitely not true" (a minus 3). Thus the positive items were numerically weighted from "definitely true" 3 2 1 -1 -2 -3 to "definitely not true." Thus negative items were keyed from "definitely true" -3 -2 -1 1 2 3 to "definitely not true." Both keyed values for each question were then summed to provide a total score. A constant of three was added to each item to eliminate negative score values for purposes of statistical computations. The item-total correlations, together with the means and standard deviations, for the sixteen items of the B-L for this sample of mothers is reported in Table 2. The items for the B-L are in the appendix. One-word descriptions of the content described in the sixteen items are included in Table 2 for the assistance of the reader. The B-L was administered by a social worker, employed by the Child Study Center. The social

TABLE 2

Means, Standard Deviations, and Reliability  
Estimates for Warmth Subscale of Adopted  
Barrett-Lennard Relationship Inventory

Barrett- Lennard	Means	Standard deviations	Correlation with TTS*
1. Respects	4.63	.56	.77
2. True liking	4.73	.64	.74
3. Impatient	4.43	.86	.84
4. Appreciative	4.77	.63	.77
5. Uninterested	4.67	.99	.90
6. Indifferent	4.47	.86	.90
7. Cares for	4.90	.96	.87
8. Disapproves	4.90	.76	.72
9. Just tolerates	4.33	1.06	.77
10. Friendly & warm	4.50	1.20	.73
11. Value relationship	5.00	.83	.54
12. Not to like	4.60	.85	.71
13. Irritated & bothered	5.03	.62	.67
14. Feels contempt for	4.80	.85	.75
15. Truly interested	4.57	1.10	.81
16. Deep affection	5.10	.61	.79
	Means	Standard deviations	Total test reliability
Total	75.43	10.73	.96

\*total test score corrected for spuriousness.

worker rated each mother on each item obtaining a measure of mother warmth towards her infant.

Total scores for each of the three instruments were obtained and a product moment correlation was computed (1) between the MDI (BSID) and the L-R in order to determine the relationship between the child's MDI and the perceived warmth of the maternal grandmother by the infant's mother; (2) between the MDI (BSID) and the B-L in order to determine the relationship between the child's MDI and the rated warmth of the mother; (3) between the L-R and the B-L warmth scale in order to determine the relationship between the perceived warmth of the grandmother and the observed warmth of the mother herself. A two-tailed test of  $t$  was used to determine whether the correlations were significant. The .05 level of significance was arbitrarily chosen as the statistical level for accepting the research hypotheses.

## CHAPTER III

### RESULTS

None of the three hypotheses were supported by the results. The hypothesis of a relationship between the MDI and B-L was rejected ( $r = .12, p > .05$ ), suggesting the possibility that the B-L scale may not have been a sufficiently sensitive measure of maternal warmth.

The results relevant to the other two hypotheses are reported in Table 3. The magnitude of the relationship between B-L and L-R ( $r = .31, p > .05$ , two-tailed test) suggests that improved measures of B-L and L-R might provide support for this hypothesis since the magnitude of the relationship would confirm a one-tailed hypothesis. The restriction in range of the B-L and L-R scales may have mitigated against obtaining a larger relationship between these variables. It should be noted that one of the PCR scales, Neglecting, was significantly related to the B-L measure of warmth in the expected direction ( $r = -.41, p < .05$ ).

Various subscales of the PCR indicated significant relationships with the BSID. Symbolic Love Reward and BSID raw score and Developmental Age were significantly related ( $r = -.43, p < .05$ ), but not in the expected direction.

TABLE 3

Relationship of Parent Child Relations Inventory  
Subscales with the Adapted Barret Lennard  
Relationship Inventory, Bayley Scale of  
Infant Development, Raw Score,  
Mental Development Index &  
Developmental Age

PCR	B-L	Bayley raw score	Bayley MDI	Bayley developmental age
Protecting	.12	-.30	.10	-.25
Symbolic-Love Punishment	.15	.10	.38*	.16
Rejecting	-.29	-.27	-.12	-.22
Casual	-.29	-.16	-.06	-.11
Symbolic-Love Rewarding	.08	-.43*	-.06	-.43*
Demanding	.01	.09	.16	.10
Direct-Object Punishment	.08	-.36*	-.15	-.31
Loving	.15	-.14	-.15	-.16
Neglecting	-.41*	-.41*	-.12	-.34
Direct-Object Reward	-.23	-.41*	-.11	-.41*
Loving-Reject- ing-Neglecting	.31	.20	.15	.15

\* $p < .05$

Direct Object Punishment and the BSID raw score were significantly related ( $r = -.36$ ,  $p < .05$ ), as were Direct Object Reward and the BSID raw score and Developmental Age

( $r = -.41$ ,  $p < .05$ ). The Neglecting subscale and the BSID raw score were significantly related ( $r = -.41$ ,  $p < .05$ ), in the expected direction.

Table 4 lists the means and standard deviations of the BSID raw score, MDI, and developmental age of the child study sample.

TABLE 4

Means and Standard Deviations on the Bayley Scale of Infant Development Raw Score, Mental Developmental Index and Developmental Age of the Child Study Sample

BSID	Mean	Standard deviation
Raw Score	110.7	31.0
Mental Developmental Index	66.9	18.1
Developmental Age (months)	15.0	6.7

The means and standard deviations of the PCR subscales for the Child Study sample and the adult female sample reported in Roe & Siegelman (1963) are presented in Table 5 along with the computed  $t$  scores.

TABLE 5

Means and Standard Deviations and t Scores  
on the Parent Child Relations Inventory  
Subscales for the Child Study Sample  
and Adult Female Sample in  
Roe-Siegelman Study

PCR subscales	Child study sample Means	Standard deviations	Adult female sample Means	Standard deviations	t scores
Protecting	49	8.7	42	8.8	3.38**
Symbolic Love Punishment	30	5.5	27	6.4	2.15*
Rejecting	36	10.0	29	11.7	2.76**
Casual	42	7.2	44	9.1	1.05
Symbolic Love Reward	37	4.6	34	7.8	2.08*
Demanding	51	8.9	42	9.1	4.23***
Direct Object Punishment	30	6.0	23	8.3	4.21***
Loving	57	9.2	57	12.7	
Neglecting	32	9.2	27	8.3	2.39*
Direct Object Reward	31	6.0	24	7.9	4.33***

\*\*\* p < .001

\*\* p < .01

\* p < .05



## CHAPTER IV

### DISCUSSION

It has been the purpose of this paper to investigate the relationship between mental development in the infant and two variables, mother warmth and grandmother warmth as perceived by the mother herself. While research on these relationships in infants has been for the most part theoretical (Moss, 1970), it was hypothesized that even at an early age the warmth communicated by the mother to the infant would be a critical variable in mental development of the infant.

An interpretation of the data ( $r = .12$ ,  $p > .05$ ) would not appear to substantiate a relationship between mother warmth as rated on the B-L and the MDI during the first thirty months of life. This was also the case between the variables MDI and the perceived warmth of the maternal grandmother on the L-R as the data in Table 3 suggests ( $r = .15$ ,  $p > .05$ ). Several factors can be suggested as contributing to these results which fail to confirm research cited earlier in Chapter I (Becker, 1960; Greenberg and Hurley, 1970; Sears, Maccoby, and Levin, 1957; Siegelman, 1965; Spitz, 1960). The B-L scale as revised for the purpose of this study, did not appear to be a sensitive instrument for the

measurement of maternal warmth. There was very little variability among the ratings of mother warmth. Examination of the response data on the B-L compiled for this sample, tends to confirm a rater bias towards girls. Mothers of girls were consistently rated as warmer than mothers of boys. This might have been controlled with the use of multiple raters, but due to extenuating circumstances, only one rater was utilized.

A possible reason for the lack of significant relationships between the MDI and the B-L and the L-R could be the large age range that existed between the Ss. The mean BSID raw score of the present sample ( $\bar{X} = 110$ , for  $\bar{X}$  age of 21 months) is over three standard deviations below the mean reported by Bayley, and the observed MDI was two standard deviations below the mean MDI score reported by Bayley (1969, p. 20). This is a significant developmental lag when compared with the standardization sample reported in Bayley (1969). The mothers of the Child Study sample viewed their mothers as significantly more rejecting, demanding, and neglecting than the adult female sample reported by Roe & Siegelman (1963). This factor may have contributed to the low developmental age reported for the Child Study sample which would also lend support to the notion that child rearing practices are handed from mother to daughter.

Of all the PCR subscales, there was only one that indicated a significant relationship ( $r = .38$ ,  $p < .05$ )

between the MDI and perceived grandmother warmth was the Symbolic Love Punishment. It appears that as the MDI increases, so does the mother's perception of her mother using Symbolic Love Punishment in her rearing of the infant's mother.

Further investigation of Table 3 denotes significant inverse relationships between Symbolic Love Reward, BSID raw score and developmental age ( $r = -.41, p < .05$ ). This suggests that as an infant's raw score or developmental age increases, the mother's perception of her mother's use of symbol-love rewards in child-rearing decreases. Another significant inverse relationship existed between the Neglecting subscale and the BSID raw score ( $r = -.41, p < .05$ ) which indicates that the more neglecting the infant's mother views her mother, the lower the raw score achieved by the infant on the BSID. This could lend support to the notion that child rearing practices are passed from mother to daughter.

The correlation between the B-L and the L-R ( $r = .31, p > .05$ ) does not support the existence of a strong relationship between rated mother warmth and the perceived warmth of the maternal grandmother. This coupled with the significant relationship between the Neglecting subscale and the B-L ( $r = .41, p < .05$ ) suggests that mothers transmit their child-rearing practices to their daughters.

Examination of Table 5 reveals that eight of the ten computed  $t$  scores between the Child Study sample and the adult female sample reported by Roe & Siegelman (1963) were significant in the undesirable direction. This supports findings that mothers of lower socioeconomic status tend to be more controlling and punitive while mothers of higher socioeconomic status tend to be more warm, understanding, and accepting (Bayley & Schaeffer, 1960; Sears, Maccoby, & Levin, 1957; White, 1957). As noted earlier, the mothers in the present study were of lower socioeconomic status.

Apparent biasing effects in the present study have been homogeneity of both the parent sample as regards socioeconomic stratification and the infant population as regards their MDI scores. In addition, the diverse age range of the infants may have in part, contributed to the large variability present in the BSID scores. These potentially biasing affects on the data are limitations which would need to be controlled for in further research of this nature. However, it was felt that a number of significant relationships existed between the BSID and the subscales of the PCR to provide trends regarding the transmitting of child-rearing practices from mother to daughter especially in regards to the use of reward and punishment.

APPENDIX

## MOTHER-CHILD RELATIONSHIP INVENTORY

(ADOPTED FROM BARRETT-LEONARD RELATIONSHIP INVENTORY)

**DIRECTIONS:** Listed below are statements that describe how a Mother can feel and behave in relation to her child.  
 Answer each statement with reference to how the Mother seems to typically respond to her child.  
 Please mark each statement in the space provided according to the following answers:

6. Definitely true
5. True
4. More true than untrue
3. More untrue than true
2. Not true
1. Definitely not true

Mark every statement. Do not skip any.

NAME OF MOTHER: \_\_\_\_\_

- \_\_\_ 1. She respects her child as a person.
- \_\_\_ 2. She displays a true liking for her child.
- \_\_\_ 3. She is impatient with her child.
- \_\_\_ 4. She seems to appreciate her child's existence.
- \_\_\_ 5. She reacts to her child in an uninterested manner.
- \_\_\_ 6. She is indifferent towards her child.
- \_\_\_ 7. She cares for her child.
- \_\_\_ 8. She appears to disapprove of her child.
- \_\_\_ 9. She just tolerates her child.
- \_\_\_ 10. She is friendly and warm with her child.
- \_\_\_ 11. She seems to value her relationship with her child.
- \_\_\_ 12. She appears not to like her child.
- \_\_\_ 13. She seems irritated and bothered with her child.
- \_\_\_ 14. At times she feels contempt for her child.
- \_\_\_ 15. She is truly interested in her child.
- \_\_\_ 16. She feels deep affection for her child.

## RELATIONSHIP INVENTORY SCORING SHEET

NAME OF MOTHER: \_\_\_\_\_

POSITIVE WARMTH ITEMS	SCORE
-----------------------	-------

1

2

4

7

10

11

15

16

SUBTOTAL	SCORE
----------	-------

NEGATIVE WARMTH ITEMS	SCORE
-----------------------	-------

3

5

6

8

9

12

13

14

SUBTOTAL SCORE

TOTAL SCORE

Positive items "definitely true" 3 2 1 -1 -2 -3 "definite  
not true."

Negative items "definitely true" -3 -2 -1 1 2 3 "definite  
not true."

## REFERENCES

- Banham, H. F. The development of affectionate behavior. In M. T. Haimowitz, & N. R. Haimowitz (Ed.), Human development: Selected readings. New York: Thomas Y. Crowell, 1960.
- Barrett-Lennard, G. T. Dimensions of therapist response as causal factors in therapeutic change. Psychological Monographs, 1962, 76 (43, Whole No. 562).
- Barrett-Lennard, G. T. Technical note on the 64-item revision of the relationship inventory. Ontario, Department of inventory. Ontario, Department of Psychology, University of Waterloo, 1969.
- Bayley, N. A study of the crying of infants during mental and physical tests. Journal of Genetic Psychology, 1932, 40, 306-329.
- Bayley, N. Factors influencing the growth of intelligence in young children. In G. M. Whipple (Ed.) Intelligence: Its nature and nurture. Part 2. 39th Yearbook of national society for study of education. Bloomington, Ill.: Public School Publishing, 1940.
- Bayley, N., & Schaeffer, E. S. Relationships between socioeconomic variables and the behavior of mothers toward young children. Journal of Genetic Psychology, 1960, 96, 61-77.
- Bayley, N., & Schaeffer, E. S. Correlations of maternal & child behaviors with the development of mental abilities: Data from the Berkeley growth study. Monographs of the Society for Research in Child Development, 1964, 29 (6, Whole No. 97).
- Bayley, N. Comparisons of mental and motor tests scores for ages 1-15 months by sex, birth order, race, geographical location, and education of parents. Child Development, 1965, 36, 379-411.
- Bayley, N. Manual for the Bayley scales of infant development. New York: The Psychological Corporation, 1969.



- Becker, W. C. The relationship of factors in parental ratings of self and each other to the behavior of kindergarten children as rated by mothers, fathers, and teachers. Journal of Consulting Psychology, 1960, 24, 507-527.
- Becker, W. C. Consequences of different kinds of parental discipline. In M. S. Hoffman & L. W. Hoffman (Ed.) Review of child development research. Vol. 1. New York: Russell Sage Foundation, 1964.
- Bowlby, J. Child care and the growth of love. In J. T. Haimowitz, & N. R. Haimowitz (Ed.) Human Development: Selected readings. New York: Thomas Y. Crowell, 1960.
- Buros, O. K. (Ed.) The seventh mental measurement yearbook. Vol. 1. New Jersey: Gryphon Press, 1972.
- Caldwell, B. M. The effects of infant care. In M. S. Hoffman, & L. W. Hoffman (Ed.), Review of child development research. Vol. 1. New York: Russell Sage Foundation, 1964.
- Chess, S., & Thomas, A. (Ed.), Annual progress in child development. New York: Brunner/Mozel Inc., 1971.
- Dennis, W., & Najarian, P. Infant development under environmental handicap. In M. T. Haimowitz, & N. R. Haimowitz (Ed.), Human development: Selected readings. New York: Thomas Y. Crowell, 1960.
- Greenberg, N., & Hurley, J. The maternal personality inventory. In J. Hellmuth (Ed.), Exceptional infant. Vol. 2. Studies in abnormalities. New York: Brunner/Mazel, 1971.
- Harlow, H. F. The nature of love. In M. T. Haimowitz, & N. R. Haimowitz (Ed.), Human development: Selected readings. New York: Thomas Y. Crowell, 1960.
- Harlow, H. F., & Harlow, M. Learning to love. In P. Mussen, J. Conger & J. Kagan (Ed.), Readings in child development and personality. New York: Harper & Row, 1970.
- Hetherington, E. M., & Frankie, G. Effects of parental dominance, warmth, and conflict on imitation in children. In P. Mussen, J. Conger, & J. Kagan (Ed.), Readings in child development and personality. New York: Harper & Row, 1970.
- Jersild, A. Child psychology. New Jersey: Prentice Hall, 1968.
- McCandless, B. R. Children and adolescents. New York: Holt, Rinehart, & Winston, 1961.

- Moss, H. Sex, age, and state as determinants of mother-infant interaction. In P. Mussen, J. Conger, & J. Kagan (Ed.), Readings in child development and personality. New York: Harper & Row, 1970.
- Peterson, D. R., Becker, W. C., Hellman, T. A., Shoemaker, D. J., & Quay, H. C. Parental attitudes and child adjustment. Child Development, 1959, 30, 119-130.
- Peterson, D. R., Becker, W. C., Shoemaker, D. J., Turia, Z., & Hellman, T. A. Child behavior problems and parental attitudes. Child Development, 1961, 32, 151-162.
- Pinneau, S. R. The infantile disorders of hospitalism and anaclitic depression. Psychological Bulletin, 1955, 52, 429-452.
- Roe, A., & Siegelman, M. A parent-child relations questionnaire. Child Development, 1963, 34, 355-369.
- Schaffer, H. R. Activity level as a constitutional determinant of infantile reaction to deprivation. Child Development, 1966, 37, 595-602.
- Schaffer, H. R., & Emerson, P. E. Patterns of response to physical contact in early human development. In P. Mussen, J. Conger, & J. Kagan (Ed.), Readings in child development and personality. New York: Harper & Row, 1970.
- Sears, R., Maccoby, E., & Levin, H. Patterns of child rearing. New York: Row, Peterson & Company, 1957.
- Siegelman, M. College student personality correlates of early parent-child relationships. Journal of Consulting Psychology, 1965, 29, 558-564.
- Spitz, R. A. Motherless infants. In M. T. Haimowitz, & N. R. Haimowitz (Ed.), Human development: Selected readings. New York: Thomas Y. Crowell, 1960.
- White, M. S. Social class, child rearing practices and child behavior. American Sociological Review, 1957, 22, 704-712.