

HOME ENVIRONMENT, MATERNAL ATTITUDES, MARITAL ADJUSTMENT,
AND SES: THEIR ASSOCIATION WITH MENTAL AND MOTOR
DEVELOPMENT OF TWO-YEAR-OLD CHILDREN

BY

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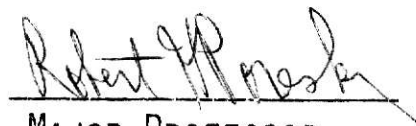
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CHAPTER I: INTRODUCTION

In the last decade a tremendous amount of effort has been expended to describe why it is that some children enter school with the broad array of capacities and social skills necessary to make the most of their school experience while other children enter school totally lacking in these attributes. The Head Start Program was developed as a remedial measure to cope with the problem but as White and Watts (1973) along with many others have concluded, these critical traits are already formed by the time the child enters the program. This has compelled researchers to probe deeply into the first two years of life for the environmental determinants of later scholastic ability. This is a necessary first step in locating high risk environments and locating points at which intervention may be successfully applied.

A few researchers have probed into infancy and their results have been encouraging. For example, Caldwell and associates (1967), utilizing an instrument developed for descriptive evaluation of environments have found that environmental assessment with this instrument produces scores which are inversely correlated with IQ gain resulting from enrollment in a preschool enrichment program. Examination of the concepts used in the construction of this instrument yield valuable information about home environments. The use of the instrument as a screening device for admittance to an intervention program

could increase the cost efficiency of that program over one which utilizes social class status as the index for admission.

The present study is a continuation of the research effort in which Caldwell and others have been involved. For the current study, Caldwell's inventory of the home environment and a parental attitude measure were selected and administered to a sample of mothers along with a measure of the child's mental and motor development, for the dual purpose of:

(a) validating the use of these instruments as predictors of mental development and thereby validating their use as evaluative indexes of the environment; and, (b) validating the importance of the concepts used in their construction.

REVIEW OF THE LITERATURE

Piaget, as a result of his observations, points out four major prerequisites of cognitive advance (Ginsburg and Oppen, 1969). These are: (a) appropriate neurological development, (b) a proper social environment, (c) experience with things, and (d) internal cognitive reorganization. Likewise, Jordan and Spanner (1970, 1972), in a three year longitudinal study, have related three clusters of measures made during the first six months of life to cognitive development at ages one, two and three. These clusters, or "models" as Jordan and Spanner refer to them, are: (a) the biological model, which consists of physiological measures such as Apgar score, birth weight, and risk factor (presence of perinatal complications); (b) the macroscopic ecological model, which consists of measures for

socioeconomic status (SES) and ethnicity (white vs. nonwhite identity); and (c) the microscopic ecological model, which consists of measures related to authoritarian parental attitudes and manifest anxiety. Each of these research theorists was attempting to formulate a theoretical framework within which the critical conditions for optimal mental growth could be isolated.

However, the work of Piaget, Jordan and Spanner, and the many others working along similar lines is only a start. Perhaps the best example of this is the results obtained by Jordan and Spanner in their three year study. They found that the predictive power of all three models combined through multiple regression analysis could account for only 15.9% of the variance at the end of the first year, 6.1% after the second year, and 25.5% after the third year. These results indicate that the index measures used were incomplete in that they did not measure many of the critical conditions necessary for optimal mental development.

After Jordan and Spanner had planned their study, however, several new instruments that focus solely on the microscopic ecological area during infancy have appeared. Perhaps the most notable of these is the one developed by Caldwell and associates (Note 1). This instrument is an inventory of the home learning environment and, according to their data, the full scale score on this instrument administered at age six months yields a correlation with Binet IQ at thirty-six months of $r = .50$ (Elardo, et.al., 1975). This represents predictive power for 25% of the variance which equals the combined

predictive power of the measures utilized by Jordan and Spanner, and exceeds the predictive power of the SES and ethnicity measure alone.

The long-term effects of environmental measures made in infancy have been demonstrated by Bayley and Schaefer (1964) with the results of the Berkeley Growth Study, an eighteen year longitudinal study. This study indicated that the SES, which measures father's education, mother's education, father's occupation, income, and a composite social rating, made in infancy, yield correlations with IQ at age 18 between .20 and .50 for males, and between .30 and .50 for females. Observed nurturant maternal behavioral measures also made in infancy for this study were found to correlate positively with IQ at age 18 while observed controlling and punitive behaviors were found to correlate negatively with IQ at age 18. This study firmly establishes the importance of the early environment for mental development, and supports results from the Jordan and Spanner study that SES is strongly related to mental development.

The indication from the Jordan and Spanner study that authoritarian parental attitudes are related to mental development has been further confirmed by Radin and Glasser (1972). They developed an abbreviated version of the Parental Attitude Research Instrument (PARI) (Schaefer and Bell, 1958) which includes a sub-scale measuring authoritarian attitudes. Their study shows that scores on these measures correlate positively with observed maternal behavior which in turn has been related

to mental development by the Bayley and Schaefer study.

All of the studies mentioned thus far show the importance of the environment experienced by the child during infancy. Furthermore, they demonstrate that a variety of measures which focus on highly diverse characteristics of the environment such as Apgar score at birth, family income, authoritarian parental attitudes, and nurturant maternal behavior can be used to predict long-term mental development. But many questions remain. Why should family income and the other SES measures be related to mental development? What are the social and physical environmental conditions that underlie this relationship between SES and mental development? Which of the various measures used holds the highest relationship with mental development? Which give the most reliable predictions? Which is the most efficient? Are there other measures not included in these studies that are related to mental development? No one study can answer all of these questions, but the current study was undertaken to help answer a few of them. In doing so, a better data base would be provided for the design and implementation of preschool intervention programs.

INSTRUMENT SELECTION

The instruments selected meet the following general guidelines: (a) the instrument is currently available, (b) the instrument is not open to a high degree of subjective interpretation on the part of the trained administrator, and (c) the instrument has been used as, or holds the potential

for being used as, or incorporated into, a screening device for preschool programs.

Caldwell's Home Environment Inventory. The first instrument to be considered and accepted was the Inventory of the Home Learning Environment (HOME) developed by Caldwell and associates (Note 1). This instrument (see Appendix B) was "...designed to sample certain aspects of the quantity and quality of the social, emotional, and cognitive support available to a young child (birth to three years) within his home. The selection of items has been guided by empirical evidence of nourishing the behavioral development of the child" (Caldwell, Note 1, p. 1).

The sub-scale organization of the HOME provides the listing of the six basic concepts that it is designed to measure. The first sub-scale, the Emotional and Verbal Responsivity of the Mother, measures "...the opportunity to form a basic attachment...in an emotional climate characterized by mutual pleasure, (and) sensitive need-gratification..." (Caldwell, Note 1, p. 1). The Avoidance Restriction and Punishment sub-scale measures both the degree to which the emotional climate is free of directly expressed hostility through punitive and derogatory maternal behavior and the degree to which the child is free to move about his environment. The Organization of the Environment sub-scale measures the degree to which the child is exposed to a variety of physical settings that are stimulating yet familiar and safe. The Provision of Appropriate Play Materials sub-scale measures the degree to which the child has

toys and playthings appropriate to his age and which will facilitate cognitive growth. The Maternal Involvement with the Child sub-scales the degree to which the mother estimates the abilities of the child and encourages developmental advance. The Opportunities for Variety in Daily Stimulation sub-scale measures the degree of variety that is present in the daily cultural setting of the child. It should be noted that these sub-scales were developed utilizing factor analysis thus grouping related items so that each sub-scale grouping tends to occur together.

This measure represents a broad sampling of theoretically important environmental conditions and the method of administration requires only a minimum of subjective interpretation on the part of the administrator although it does require some in the interpretation of the observed emotional responses of the mother as well as determining which toys are age-appropriate. Caldwell and associates have used the instrument in conjunction with a preschool intervention project, and as such, it meets the general requirements for selection. The only disadvantage inherent in the HOME is the fact that it is not conducive to administration in an office setting, but requires an individual home visit which is time consuming. This disadvantage led to the consideration of parental attitude measures.

The Parental Attitude Research Scale. The Jordan and Spanner (1970, 1972) study and the Randin and Glasser (1972) study utilized parental attitude measures as direct or indirect

predictors of mental development. The possibility of utilizing such an instrument was of interest for the present study because it would overcome the disadvantage of the HOME in that it could be administered in an office setting. However, a search of the literature did not reveal an instrument with data which validated its use for prediction of mental development other than the one used by Jordan and Spanner which produced very low correlations. This made it necessary to search for an instrument which sampled a broader range of attitudes than the one used by Jordan and Spanner and rely on the present study to provide initial validation.

A search of the literature revealed three attitude instruments that appeared to have the necessary diversity, including the one used by Radin and Glasser. The other two were the original version PARI (Schaefer and Bell, 1958) and the Hereford Parental Attitude Survey (1963) a derivative of the PARI with 50% of the items coming directly from the PARI. However, each of these instruments was subject to the same criticisms Zuckerman and associates (1958), working with the PARI, had pointed out. He found that there were two major sources of variance other than content in scores on PARI. The first source was response acquiescence set, the tendency to answer "yes" regardless of content. The second source of variance, other than content, was the educational level of the mother. These criticisms, plus the fact that all of the instruments were standardized on middle-class samples, made their use unacceptable for this study.

In 1969, Cromwell (Note 2) developed an extensive modification of the PARI which held promise of overcoming the criticisms directed at the PARI. This instrument, the Parental Attitude Research Scale (PARS), was constructed so that most of the items required disagreement for a high score, thus overcoming the effects of response acquiescence set; and the wording level used in the items was controlled so that culturally deprived respondents could understand the items. Then, when the instrument was standardized, it was standardized on two samples, a middle-class sample and a lower-class sample. The instrument met each of the general qualifications for inclusion in the study and was accepted.

The concepts the scale is designed to measure are relatively straightforward, in that each sub-scale is homogeneous, with all items within it designed to measure the same central concept. The sub-scale names (see score sheet, Appendix C) reflect the concepts that they measure.

These two instruments, the HOME and the PARS, were selected to serve as the major focal points for this study, but a number of theoretical questions arose concerning the validity of certain sub-scales of the PARS. These were the group of sub-scales that relate to marital adjustment and the authoritarianism sub-scale. These questions led to the inclusion of two other instruments in the study.

The Authoritarianism Sub-scale of the Parental Attitude Research Instrument. As originally written, the Authoritarianism sub-scale of the PARI (AS-PARI) (see Appendix D) was designed

to determine the degree to which parents thought that they deserved the loyalty, esteem, and reverence of the child simply because this is the right of a parent. However, for Cromwell's authoritarianism sub-scale, much of this original intent appeared to have been lost. Item number 36, for example, refers to a number of theoretically distinct concepts such as child verbalization, the amount of work the child does, and it associates these with the well-being of the family. It is possible that authoritarian parents may expect their children to "shut up and get to work" but is this the way most parents interpret the question and, even if most do interpret it this way, how many do not expect this of their children but still feel they deserve the highest esteem and regard of the child? Item 86 is even further removed in that the father as the "leader and authority in the family" would first have implications for husband-wife interaction before it would imply a condition which would affect parent-child interaction. Because of these differences the AS-PARI was included in the study to validate the Authoritarianism sub-scale of the PARS.

Marital Adjustment Test. The PARS contains a group of sub-scales which Cromwell has categorized as marital adjustment scales. These are, Marital Conflict, Irritability, Inconsiderateness of the Husband, Seclusion of the Mother, and Ascendance of the Mother. Many of these sub-scales utilize an indirect approach to measuring marital adjustment. The Irritability sub-scale, for example, was designed to indicate the

"tension" in the mother, and Cromwell admits that "this scale may be related to several sources of tension but it seems feasible that it would also reflect tensions in the marital relationship" (Cromwell, Note 2, p. 32). This assumption may seem feasible, but to what extent do marital tensions affect the mother's relationship with her children? Is it not just as feasible that a mother dissatisfied with her marriage might find consolation in her children and use them as a vehicle to reduce tensions?

The Seclusion of the Mother sub-scale was designed to assess the degree of dissatisfaction with the homemaking role. Does this satisfaction in a homemaker role necessarily reflect marital satisfaction? Is it not possible that a wife and mother could be genuinely dissatisfied with the homemaker role, leave her child with a baby-sitter during the day, take a job, and be perfectly happy with her life and her marriage? Because of serious theoretical questions such as these, an independent marital adjustment measure was also included in the study to validate the PARS marital adjustment scales.

The marital adjustment instrument which was accepted for use in the study was the short Marital Adjustment Test (MAT) developed by Locke and Wallace (1959) (see Appendix E). This instrument relies heavily on self-rating measures to establish the level of marital adjustment, and as such, it depends heavily on the perception by the individual rather than objective demonstration of adjustment. However, this same dependence on parental perception is found in the construction

of the PARS. This consistency in the method of measurement was considered desirable for the validation task at hand.

Socioeconomic Status. The final independent measure included in the study was a measure of SES, and it was included to serve a dual role. It should be recalled that in both the Jordan and Spanner study (1970, 1972) and the Berkeley Growth Study (Bayley and Schaefer, 1964), SES measures made in infancy were found to correlate significantly with later mental development. This justifies the use of SES measures as predictors of mental development.

The SES measure selected for use in this study included four of the five SES measures used in the Berkeley Growth Study. These were: (a) father's education, (b) father's occupation, (c) mother's education, and (d) family income. Each of these represents a simple judgement-free measure. The composite social rating used in the Berkeley Growth Study is not as simple nor is it totally judgement free. For these reasons, it was not included in the study. The scoring system used to give a total SES score will be discussed later in the chapter on methodology.

Infant Development. The environment to which an infant is exposed undoubtedly has an effect on almost all areas of development. The area of major interest here, however, is the area of mental development even though there may be social skills and motivational variables which play a role in allowing the child to make the most of his education. The isolation, measurement, and integration of these must be left to

another time and other studies.

The instrument selected to measure mental development was the Bayley Scales of Infant Development (Bayley, 1969). Both the mental and the psychomotor scales were used since motor development plays such a large role in the measurement of mental abilities at this age (Bayley, 1969).

STUDY DESIGN

As stated earlier, the primary purpose of the study was to validate the use of instruments, primarily the HOME and the PARS, for use as predictors of infant mental development. The method chosen to accomplish this was to administer all of the instruments to the appropriate member of a sample of mother-child dyads concurrently at an age of approximately two years, to correlate the environmental measures with the developmental measures and to each other when appropriate, and to examine the correlations before and after controlling for SES. Several of these procedures require further elaboration.

The role of the Mother. The selection of the mother as the only source of environmental information is not only a limitation of this study, it is a limitation of the studies reviewed and the instruments available. In the studies reviewed, the mother has served as the single source of environmental information or, in some cases, the object of evaluation. The HOME requires that the mother and child be observed together and only two items provide information about

the father or a father figure. The PARS, while at least holding the potential for administration to fathers, was standardized utilizing only mothers. Also, a close examination of the marital adjustment sub-scales of the PARS will indicate that they were designed to assess the marital adjustment of the mother and require administration to the mother for content validity. Integrating the role of the father into studies such as this is a complex task, requiring new instruments and much research.

Concurrent vs. Longitudinal Design. Ideally, a study to validate the use of instruments as predictors of mental development should be a longitudinal study. However, data presented by Elardo et.al. (1975) point up some interesting results in this regard. This study was longitudinal in design, with administration of the HOME at 6 months of age and administration of the Binet at 36 months. In this study, the HOME was also administered at 12 and 24 months and correlated with Binet IQ at 36 months. These correlations are high and progressively increase in magnitude, with 6 month HOME score correlating $r = .50$, the 12 month HOME score correlating $r = .55$, and the 24 month HOME score correlating $r = .69$.

These results can be interpreted to indicate two things. First, it indicates that the environment to which these children were exposed most likely did not change drastically or rapidly over the 30 month period. If it had, the series of correlations would have been much lower. Secondly, these results indicate that to the degree that the environment

did change, the immediate environmental situation appears to be of greater importance than the former environment. The first indication could have been substantiated better if the test-retest correlation for HOME scores had been presented, but they were not. To the extent that these test-retest correlations are high, concurrent measurement of the environment and developmental status is justified.

The Use of SES as a Control Variable. The study designs of the Berkeley Growth Study (Bayley and Schaefer, 1964), and the Elardo, et.al. (1975) study utilized simple correlational analysis. The Jordan and Spanner (1970-1972) study, on the other hand, utilized a design which required that all interaction between the three models be controlled out before the effects of each model were considered. Each of these designs has certain limitations.

The design that does not control for SES involving variables correlated with SES is open to spuriously high and low correlations which can lead to inaccurate results. An example will illustrate a spuriously low correlation. Assume that nurturant maternal behavior toward a child is conducive to good mental development and that strict controlling behavior is detrimental to good mental development. Also assume that the presence of one type of behavior will offset the benefit or loss of the other to a substantial degree. Now imagine a culture in which the frequent occurrence of one type of behavior will usually be accompanied by frequent occurrence of the other; in other words, they are positively related. If a study was conducted with

this culture, a measure of nurturant maternal behavior would not show a strong positive relationship with mental development because any gains made by increased nurturant behavior would be offset by increased controlling behavior; in other words, a spuriously low correlation would result. This spuriously low correlation could be detected, however, by simply controlling for strict maternal behavior which would result in a high partial correlation between nurturant maternal behavior and mental development.

The design that controls for SES, on the other hand, runs the risk of controlling out many of the differences between the lower and middle-class environments which are responsible for the high correlations between SES and mental development. Simple correlational analysis cannot overcome this difficulty and because of this, both the full and the partial correlations were obtained. If these correlations differed substantially, then a complex interaction between that measure, mental development, and SES would be indicated that would require theoretical analysis and further study to clarify.

CHAPTER II: METHOD

SUBJECTS

The subjects were 27 mother-child dyads with 15 male and 12 female children represented. The children were between the ages of 24 and 29 months with a mean age of 26.7 months and a standard deviation of 1.5 months. Table 1 presents the age distribution of the children. All of the children were free from obvious physical and mental handicap.

The subjects for the study were obtained from the Topeka and Manhattan, Kansas areas through a number of different sources to avoid biases introduced by selection process. The middle-class portions were reached primarily through birth records, acquaintances of the author, and the University Day Care Center. The lower-class portion was reached predominantly through community service agencies such as community day care centers and job development organizations. All prospective subjects were given a detailed explanation of the study and its purpose and informed consent was obtained from all mothers participating in the study (see Appendix A).

Twenty-three of the mothers were currently married to and living with the child's natural father while four were either divorced or separated and in the process of obtaining a divorce. Of these, only one of the fathers had not been present in the home for the first 18 months of the child's life.

TABLE 1
DISTRIBUTION OF AGE IN MONTHS FOR THE CHILDREN IN THE SAMPLE

AGE OF CHILDREN (MONTHS)	N	%
24	4	14.8
25	2	7.4
26	3	11.1
27	9	33.3
28	8	29.6
29	1	3.7

Twenty-two of the mothers were Caucasian, two were Black, and three were of Mexican descent. Except for one Caucasian mother who had married and divorced a Mexican-American, and a Mexican-American mother who had married and divorced an American Indian, all of the mothers had married members of the same race. Four of the children were from bilingual homes, but Spanish was used as the primary language in only one of these homes.

The social class status of the families ranged from middle-lower class to middle class. Table 2 presents the educational, income and occupational data for the sample. No significant sex differentials were found for age of child, social class, race or marital status. The mean mental development index for the sample was 109 with a standard deviation of 15.9. No significant sex differential was present.

For children in the study, the mothers reported that they provided between 20% and 100% of the routine care for the child as compared to the care provided by the father. In only one case did the mother provide less than 50% of the care for the child and the mean proportion was 73% for the total sample. For the male sub-sample, the mean proportion of maternal care was 79% and the father provided some form of regular daily care in 60% of the cases as defined by a "yes" response to item 41 of the HOME (see Appendix B). For the female sub-sample, the mean proportion of maternal care was 65% and in 100% of the cases the father provided some form of regular daily care, including the one case where the parents

TABLE 2
SES DATA FOR THE PARENTS OF SUBJECTS

FATHER'S EDUCATION (YRS.)	N	%	MOTHER'S EDUCATION (YRS.)	N	%	FATHER'S OCCUPATION	N	%	INCOME (x \$1000)	N	%
9	2	7.4	8	1	3.7	Unskilled	3	11.1	1	1	3.7
11	1	3.7	9	1	3.7	Serv. Worker	1	3.7	2	1	3.7
12	7	25.9	10	1	3.7	Semiskilled	9	33.7	3	1	3.7
13	5	18.5	12	13	48.1	Craftsman	6	22.2	4	1	3.7
14	3	11.1	13	2	7.4	Salesman	1	3.7	5	5	18.5
15	2	7.4	14	2	7.4	Manager	2	7.4	8	4	14.8
16	1	3.7	15	3	11.1	Clerical	0	0.0	9	2	7.4
17	2	7.4	16	2	7.4	Professional	5	18.5	10	1	3.7
19	2	7.4	17	2	7.4				12	5	18.5
20	2	7.4							13	1	3.7
									14	2	7.4
									15	1	3.7
									16	1	3.7
									20	1	3.7

Mean = 14.0, SD = 3.0 Mean = 12.9, SD = 2.2 Mean = 9.1, SD = 4.7

were divorced. The sex differential for the proportion of maternal care is not significant ($t = 1.64$, $df = 25$, $p > .05$). The differential in the proportion of cases where the father provided no daily care, however, is significant (By Fisher Exact Test, $p = .034$).

Instrumentation. The instruments utilized by the study were as follows.

1. The Inventory of the Home Learning Environment (HOME) was used as a primary measure of the home environment (see Appendix B). This instrument was developed by Bettye M. Caldwell and associates and is available from the author (Caldwell, Note 1). The instrument measures six factors relating to the home learning environment which are: (a) the emotional and verbal responsivity of the mother; (b) the avoidance of restriction and punishment; (c) the organization of the environment; (d) the provision of appropriate play materials; (e) the maternal involvement with the child; and, (f) the opportunities for variety in daily routine.

2. The Parental Attitude Research Scale (PARS) (Cromwell, Note 2) was used as the measure of parental attitudes toward child-rearing (see Appendix C). The instrument is designed to measure attitudes on 25 theoretical concepts which are reflected by the sub-scale titles presented on the score sheet in Appendix B.

3. The short Marital Adjustment Test (Locke and Wallace, 1959) (MAT) was used to validate the marital adjustment sub-scales of the PARS (see Appendix E).

4. The Authoritarianism sub-scale of the Parental Attitude Research Instrument (AS-PARI) (Schaefer and Bell, 1958) was used to validate the Authoritarianism sub-scale of the PARS. (See Appendix D).

5. The socioeconomic status (SES) scale used was an index computed according to the formula, $\text{index} = \text{father's education} + \text{mother's education} + \text{family income} + \text{father's occupation}$. Education was expressed as the highest grade completed (i.e. high school graduate = 12). Family income was expressed as the average yearly income from all sources (including welfare support) over the last two years in thousands of dollars (i.e. \$6,000 for the first year and \$8,000 for the second year would yield an income of 7). Occupational status was rated on an eight-point scale which corresponds to the eight Bureau of Census categories listed in Table 2. Bureau of Census definitions were used for classification. "Unskilled" received a score of one on the scale and "Professional" received a score of eight. In the one case where the child's father had not been present in the home for the first 18 months of the child's life, the mother's education and occupation were substituted for the father's.

6. Mental and motor development were assessed with the Bayley Scales of Infant Development (Bayley, 1968). The Mental Development Index (MDI) was used for mental development and the Psychomotor Development Index (PDI) used for motor development.

Procedure. Each of the instruments was administered on

one of two home visits by the author. The first visit typically consisted of: (a) a summary of the study goals, procedure and risks of the study which was followed by a request for written informed consent, (b) the gathering of SES and other demographic data, (c) the administration of the HOME, (d) the administration of the MAT and (e) the administration of the PARS with the 5 items of the AS-PARI placed at the end, in that order. The first visit required between one and three hours. The PARS, which can be administered in paper and pencil fashion or orally, was administered orally. The mother was given a copy of the PARS so that she could follow along if she wished. The subject child was awake and present at least through the administration of the HOME.

In all except three cases, the Bayley Scales were administered on the second visit to the home which required about one hour. The three children who were not tested in their homes were attending the Kansas State University Infant and Child Care Center which had testing facilities available. These children were tested at the center in the presence of a student teacher known by the child. In all other cases, the mother was present during testing.

The testing of the children in their homes presented a problem in the administration of the Psychomotor test in that it required a standard set of stairs. These would have been difficult to transport, so the stair items were not administered. For scoring purposes, however, the basal level was established in standard fashion at the first item failed. Any stair items

that fell below the basal level were counted as passed while any stair items above the basal level were counted as failed. It is believed that the omission of the stair items would have only one possible effect on study results which would be a reduction of the reliability of the Psychomotor test which in turn could attenuate the correlations that involved PDI.

Scores for each of the scales and sub-scales were computed. From these scores, Pearson product-moment correlation coefficients and partial correlations, controlling for SES, were computed utilizing the Statistical Package for the Social Sciences computer programs of the Kansas State University Computer Center. Three sets of correlations were computed; one for the total sample, one for the male, and one for the female sub-sample.

CHAPTER III: RESULTS

SOCIOECONOMIC STATUS

The correlations between the SES measure and the developmental measures are presented in Table 3. The total sample correlations are $r_{MDI} = .57$ and $r_{PDI} = .41$. Both of these correlations are significant,^a although the difference between these correlations does not appear to be great. Inspection of the sub-sample correlations, however, indicates a large sex differential in the relationship between SES and each of the developmental measures with the female sub-sample showing large and significant relationships, while the relationships for the males are relatively small and not significant. This large sex differential will be noted frequently later when partial correlations are considered.

Table 4 presents the correlations between SES and the full-scale environmental measures. All of these correlations are high, positive, and significant for the total sample. For the male sub-sample the same is true with the exception of the correlation with the AS-PARI which did not reach significance. For the female sub-sample, the correlations once again are large and positive but the correlations with the PARS and the MAT did not reach significance.

Correlations for each of the SES sub-scales are presented

^aUnless otherwise indicated, the .05 level is used to determine significance.

TABLE 3
CORRELATIONS AND PARTIAL CORRELATIONS BETWEEN
BAYLEY SCALES AND FULL SCALE ENVIRONMENTAL MEASURES

	MENTAL DEVELOPMENT INDEX		PSYCHOMOTOR DEVELOPMENT INDEX	
	$\underline{r}$	$\underline{r}_{\text{PARTIAL}}^a$	$\underline{r}$	$\underline{r}_{\text{PARTIAL}}^a$
HOME				
Total	.63*	.39	.40*	.17
Males	.57*	.57*	.16	.02
Females	.70*	.05	.66*	.34
PARS				
Total	.41*	.21	.24	.12
Males	.23	.11	-.28	-.55*
Females	.61*	.64*	.77*	.71*
AS-PARI				
Total	.21	-.09	.32	.15
Males	-.08	-.20	.06	-.02
Females	.51	-.07	.65*	.44
MAT				
Total	-.10	-.59*	-.07	-.21
Males	-.41	-.74*	-.21	-.44
Females	.55	.19	.28	.09
SES				
Total	.57*	-	.41*	-
Males	.24	-	.20	-
Females	.88*	-	.64*	-

*Correlation significant ($p < .05$)

TABLE 4
CORRELATION MATRIX FOR FULL SCALE MEASURES

	PARS	AS-PARI	MAT	SES
HOME				
Total	.58*	.60*	.17	.72*
Males	.51*	.45	.09	.69*
Females	.67*	.76*	.46	.77*
PARS				
Total		.56*	.31	.45*
Males		.63*	.47	.64*
Females		.53	.26	.37
AS-PARI				
Total			.15	.48*
Males			.06	.40
Females			.50	.61*
MAT				
Total				.54*
Males				.62*
Females				.54

*Correlation significant ($p < .05$)

at the end of Appendix F. Part-whole correlations between each of the sub-scales and the total SES score indicates large positive correlations. Income produced the lowest correlation ($r = .78$). Correlations with MDI reflect the same relationship for each of the sub-scales as they did for the total score with the same sex differential.

THE HOME ENVIRONMENT INVENTORY

The correlations between the HOME and the developmental measures (see Table 3) indicate high positive correlations of $r_{MDI} = .63$ and $r_{PDI} = .40$. A sex differential is indicated in the relationship with PDI. Controlling for SES reduces most correlations below significance but a small positive residual remains, indicating a moderate three-way interaction between the HOME, SES, and development. The sex differential apparent in these partial correlations reflects the sex differential in the relationship between SES and MDI. Table 4 shows the correlations between the HOME and the other environmental measures. These data show a high relationship between the HOME, the PARS, the AS-PARI, and SES. The relationship to the MAT, however, is apparently quite low.

Data relating to the validity of the HOME sub-scales are presented in the first section of Appendix F. The part-whole correlations for the total sample between each of the sub-scale scores and the total score of the HOME range from $r = .53$ to $r = .90$ and all are significant. Sex differentials do not appear to be great with the exception of the Emotional

and Verbal Responsivity of the Mother to the Child sub-scale. This shows a high positive correlation for the female sub-sample and a low positive correlation for the male sub-sample.

The correlations between HOME sub-scales and MDI are generally moderate to high and positive. The Avoidance of Restriction and Punishment sub-scale, however, produced a relatively low correlation ($r = .28$). Controlling for SES generally produces a slight reduction in these correlations indicating a moderate three-way interaction between the sub-scale scores, SES, and MDI. Only one of the partial correlations, however, is significant. There is generally a greater reduction for the female sub-sample. This is a reflection of the high sex differential in the correlations between SES and MDI. Inspection of correlations between the sub-scales and motor development reveals generally lower positive correlations than for MDI. However, the Organization of the Environment correlations show almost equal relationships with MDI and PDI while the Opportunities for Variety in Daily Stimulation sub-scale apparently has a much higher relationship with MDI than PDI.

THE PARENTAL ATTITUDE RESEARCH SCALE

The full-scale correlations between the PARS and the developmental measures are presented in Table 3. These correlations follow the same general pattern as the HOME correlations. The correlations between the PARS and development indicate a significant relationship with MDI ($r = .41$)

and a slightly lower but not significant relationship with PDI ($r = .24$). Controlling for SES produces a moderate reduction in these correlations. However, the sex differential present in the reductions does not reflect the earlier noted sex differential in the relationship between MDI and SES. Instead, it reflects the sex differential in the relationship between the PARS and SES (see Table 4). The correlations between the PARS and the other environmental measures are presented in Table 4 and these indicate a high interrelationship with all measures except the MAT.

The correlations for the PARS sub-scales are presented in Appendix F. The part-whole correlations for the total sample range from $r = .65$ to $r = -.27$ with a full range of values between these. The correlations with MDI range between $r = .45$ and $r = -.44$. Only four sub-scales produced significant correlations with MDI for the total sample. Sex differentials are apparent on some sub-scales (i.e. Judgement of Others). Only one sub-scale produced a significant correlation with MDI for the male sub-sample and two significant correlations were found for the females. The total sample correlations with PDI range between $r = .26$ to $r = -.24$, none of which are significant. A large sex differential is indicated in the relationship between the Approval of Activity sub-scale and PDI ($r_{\text{males}} = -.58$ and $r_{\text{females}} = .85$).

Controlling for SES generally reduces the correlations with MDI. None of these partials are significant. Controlling for SES produces a variety of changes in the correlations with

PDI. Inspection of the PDI partials reveals that significant values were obtained on one sub-scale for the total sample, on four sub-scales for the male sub-sample and two sub-scales for the female sub-sample.

The results for the authoritarianism sub-scales yield a total sample correlation between the AS-PARI and the authoritarianism sub-scale of the PARS (AS-PARS) of .59 which is significant ($p < .001$). The relationship of each of the sub-scales to MDI is identical in that $r_{\text{AS-PARI}} = .21$ and $r_{\text{AS-PARS}} = .21$ for the total sample. The correlations with SES are also quite similar, .48 and .35 respectively as are the partials .01 and -.09 respectively with MDI controlling for SES.

Only one of the five marital adjustment sub-scales of the PARS, Inconsiderateness of the Husband (IH), was found to correlate with the MAT ($r = .52, p < .01$). The relationships of these two measures to MDI are low with a small difference in that $r_{\text{MAT}} = -.10$ and $r_{\text{IH}} = .13$. The relationships with SES indicate a small difference, $r_{\text{MAT}} = .54$ and $r_{\text{IH}} = .32$ but the partials are quite dissimilar, $r_{\text{MAT}} = -.59$ and $r_{\text{IH}} = -.06$ with MDI controlling for SES.

MARITAL ADJUSTMENT

The total sample correlation with MDI is -.10 (see Table 4). The correlations for the sub-samples are $r_{\text{males}} = -.41$ and

$r_{\text{females}} = .55$. None of these correlations is significant however. The correlations with PDI are lower but follow the same general pattern. When SES is controlled however, the positive correlation with MDI for the female sub-sample is appreciably reduced, while the negative correlation for the male sub-sample increases and becomes significant. Once again, the partial correlations with PDI follow the same pattern. The correlations between the MAT and the other environmental measures are generally low positive with the exception of SES (see Table 3).

CHAPTER IV: DISCUSSION

In general, the results of the study indicate that most of the environmental measures used in this study are inter-related and are related to mental development. But to trace each one of these relationships through the maze of complex interrelationships is not the purpose of this paper. The purpose here is, first of all, to validate the use of the HOME, the PARS, the MAT, and the SES index as predictors of mental development. Secondly, and in the process of accomplishing the first goal, the purpose is to validate the concepts used in the construction of these instruments. This goal obviously only applies to the HOME and the PARS with possibly a few conceptual questions as to how the MAT produced the results that it did.

THE VALIDITY OF THE INSTRUMENTS

The Inventory of the Home Learning Environment. The results for the HOME indicate that it is generally a reliable and valid instrument. Predictive validity has been established by the correlations between both the full scale and sub-scales scores and MDI. Controlling for SES produces substantial reductions in these correlations. However, in light of the sound theoretical base upon which this instrument was constructed, these reductions are, most likely, due primarily to important environmental differences between

middle- and lower-class home environments. Internal consistency as indicated by the part-whole correlations is also quite high.

Finally, if these results are indeed valid, it is indicated that the environmental conditions assessed by the HOME are conducive to good motor development. There is, however, a sex differential indicated for motor development.

The Parental Attitude Research Scale. The results for the PARS indicate that while predictive-validity was established, especially for females, the instrument is generally unreliable as indicated by both the part-whole correlations and the sub-scale to MDI correlations. Both of these vary considerably. Most likely, this lack of reliability is due to the fact that the PARS was constructed utilizing the results of studies that primarily measured social adjustment of children rather than mental development and as such was not intended to be used as it has been used here.

However, these shortcomings do not preclude the possibility of constructing an attitude measure which could serve as index of the home environment. Indeed, 7 of the 75 correlations with MDI were significant which is actually somewhat remarkable considering the size of the sample and the fact that each sub-scale only represents five items. However, a solid base of theory would have to be used to construct such an instrument and considerable effort would be expended in refining it to the point where it might equal the HOME in reliability.

The Marital Adjustment Test. The validity of the MAT

as an index of mental development remains somewhat questionable since the correlations with MDI for neither the total sample nor the male nor the female sub-samples reached significance. However, the fact that the partial correlation for the males did reach a high negative value indicates that poor marital adjustment is somehow related to good mental development for the males. The theoretical implications of this result will be discussed in the next section.

Socioeconomic Status. The predictive validity for the SES index was only established for the female sub-sample. This is not only true for the full scale index, this is true for each of the four sub-scales which demonstrate a very high level of internal consistency. This high sex differential, however, was not found by Bayley and Schaefer (1964) utilizing a larger sample and different mental tests.

CONCEPTUAL VALIDATION

The Inventory of the Home Learning Environment. The conceptual structure of the HOME was presented above so it will not be necessary to review it again here. One additional point should be made, however. The results indicate that the Provision of the Appropriate Play Materials sub-scale holds the highest relationship with mental development, followed by Maternal Involvement with the Child. These results are supported by the Elardo (1975) study. This indicates that what the child invests his attention in, and what his mother guides his attention to, is largely responsible for his mental

growth. In other words, to the extent that the world is the child's classroom, the objects and people in it are his books, and those closest to him are his teachers, that is the extent to which his mind will grow.

The Parental Attitude Research Scale. The unreliability of the PARS sub-scales makes interpretation of their conceptual content just as unreliable but, with this in mind, an attempt will be made. For the males, the two sub-scales that were significantly related to MDI were the Breaking of the Will and the Suppression of Aggression sub-scales. On the surface it would appear that these two sub-scales would be related, linked by a certain degree of maternal dominance over the child. But when it is noticed that the Breaking of the Will sub-scale is positively related to MDI and the Suppression of Aggression sub-scale is negatively related to MDI, theory must be put aside and the method of establishing item direction examined.

The method of establishing item direction refers to how it was determined that a "strongly agree" or a "strongly disagree" response was chosen to receive a high or low score. This was done by submitting the items to a panel of "child development experts" who, utilizing theoretical considerations, determined which response was best for the child. For the Breaking of the Will items, this panel set the item direction in such a manner that the author noticed that mothers who scored low on this sub-scale were the type of mothers who would score low on the Avoidance of Restriction and Punishment

sub-scale of the HOME. Thus, the author's impression is that the content validity of this sub-scale is high. When this panel set the direction of the Suppression of Aggression sub-scale, they set the direction such that mothers that scored high on this sub-scale were, by the author's observation, the same mothers who tended to score low on the other sub-scales. Thus content validity for this sub-scale is reversed.

The three sub-scales that were significant for the female sub-sample were the Suppression of Aggression sub-scale and two sub-scales in a group of sub-scales which Cromwell has labeled "Low Income Scales". These sub-scales represent concepts that are simply characteristic of low-income families and have no clear theoretical significance. The high correlations with SES indicate that these sub-scales are valid SES measures and are correlated with MDI.

Marital Adjustment. The results obtained for the MAT are puzzling. This is due to the fact that there is a four-way interaction present between the MAT, MDI, SES, and sex. If one were to disregard all other relationships and consider only the negative relationship between the MAT and MDI for boys, then it would be possible to theorize that mothers who are dissatisfied with their marriages seek consolation in their male children. But, is it permissible to ignore the interactions of the other variables when the initial correlation between the MAT and MDI is not significant? The solution to this puzzle will require further research.

CONCLUSIONS

The study was conducted to validate the use of the Inventory of the Home Learning Environment, the Parental Attitude Research Scale and an SES index as predictors of infant mental development. The results indicate that the HOME is the best predictor of MDI and it appears to be valid for both male and female children. The SES index appeared to be valid but somewhat unstable since a large sex differential was found by this study which was not found by Bayley and Schaefer (1964). The Parental Attitude Research Scale was also found to hold a certain degree of validity, but internal consistency is very poor, indicating a low level of reliability. Further revision of the PARS might increase the reliability and validity which would make it more efficient than the HOME since administration would not require a home visit.

The size of the sample used for the study was quite small, and therefore these results should be viewed with appropriate caution. The instruments used require information to be obtained from the mother and the role of the father was overlooked by this study. Sex differentials were considered and found including one which indicates that the fathers of the female children in the sample have had more frequent contact with that child than have fathers of the male children. This difference was found to be significant indicating that it may be true for fathers of female children in general at this age.

CHAPTER V: SUMMARY

In an attempt to determine why some children are better prepared to enter school than others, a number of studies have been conducted which show that a diverse range of environmental measures made during the first six months of life are strongly related to later mental development.

In an attempt to validate certain instruments for use as predictors of infant mental development and simultaneously validate the concepts that they measure, the Inventory of the Home Learning Environment (HOME) (Caldwell, Note 1) and the Parental Attitude Research Scale (PARS) (Cromwell, Note 2), were selected to serve as the primary environmental instruments. The short Marital Adjustment Test (MAT) (Locke and Wallace, 1959) and the Authoritarianism sub-scale of the Parental Attitude Research Instrument (Schaefer and Bell, 1958) were selected to establish content validity of certain PARS sub-scales. A socioeconomic status index (SES) was included as both an environmental measure and as a control measure. The Bayley Scales of Infant Development (Bayley, 1969) were utilized to assess mental and motor development.

The method used was to administer each of the instruments concurrently to the appropriate member of 27 mother-child dyads. Data from Elardo (1975) were presented to partially justify concurrent administration. Subjects were obtained through various sources in Topeka and Manhattan, Kansas, and

ranged from middle-lower to middle class. The 15 male and 12 female children were 24 to 29 months of age. Scores for each of the scales were derived and from these scores correlations and partial correlations controlling for SES were computed for the total as well as the male and female samples.

Results indicate high intercorrelation between all major environmental measures except the MAT. The MAT produced significant correlations with SES.

Predictive validity was established for the HOME ($r_{MDI} = .63, p < .05$) as well as a high degree of internal reliability. This establishment of validity and reliability for the HOME also validates concepts that were used in the construction of the HOME. Predictive validity for the PARS was established ($r_{MDI} = .41, p < .05$), however, the general internal reliability of the instrument is poor. Correlations between the PARS sub-scores and MDI ranged between $r = .45$ and $r = -.45$ with a full range of values between these. This does not allow the validation of many of the concepts used in the construction of the PARS.

The results relating to the MAT indicate high four-way interaction between the MAT, MDI, SES and sex. This interaction suggests the possibility of inverse relationship between the marital adjustment of the mother and mental development for boys.

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APPENDIX A: INFORMED CONSENT INFORMATION

INFORMED CONSENT

Instructions: Read to mother and obtain signature if consent is granted.

We, the Department of Family and Child Development at Kansas State University, request your cooperation in a study to investigate the Social and Environmental Factors that are related to the Motor and Mental development of children. The study will consist primarily of three phases to be divided in the most convenient way. If you have any questions as I go through these, feel free to ask.

The first phase will involve a discussion between you and the interviewer in your home, with the subject child awake and present, which will focus on your relationship with the child and give the interviewer an idea of what constitutes the daily life of the child. At the end of this discussion, you will be asked to fill out a short questionnaire designed to give us an idea as to the nature of the relationship between you and the child's father.

The second phase of the study will involve another questionnaire that will allow you to express a variety of opinions on such matters as child-rearing practices, parenthood, etc.

The third and final phase will be an assessment of your child's developmental status. This will involve engaging your child in certain standard play situations such as drawing, stacking blocks, naming pictures, walking and jumping. The entire process will probably take about three hours to complete

and will be divided in the most convenient way.

It is understood that all answers given by you and your child will be strictly confidential and that your name and the name of your child will never appear in any of the study results. By signing this form, you do not waive any of your legal rights nor release Kansas State University or any of its agents from liability for negligence. Your signature simply means that you are participating on a voluntary basis, and as such you may refuse to answer any questions and you may terminate your participation at any time. If you have any questions at any time, please feel free to ask.

CONSENT FORM

I have been informed as to the nature of this study
entitled Social and Environmental Factors in Child Develop-
ment and agree to participate on a voluntary basis.

(Date)

(Mother's Signature)

(Witness)

APPENDIX B: THE INVENTORY OF THE HOME
LEARNING ENVIRONMENT (BIRTH TO THREE)

THE INVENTORY OF THE HOME LEARNING ENVIRONMENT (BIRTH TO THREE)

	Yes	No
I. EMOTIONAL AND VERBAL RESPONSIVITY OF MOTHER		
1. Mother spontaneously vocalizes to child at least twice during visit (exclude scolding)	___	___
2. Mother responds to child's vocalizations with a vocal or verbal response	___	___
3. Mother tells child the name of some object during visit or says name of person or object in a "teaching" style	___	___
4. Mother's speech is distinct, clear, and audible to interviewer	___	___
5. Mother initiates verbal interchanges with observer--asks questions, makes spontaneous comments	___	___
6. Mother expresses ideas freely and easily and uses statements of appropriate length for conversation (e.g., gives more than brief answers)	___	___
**7. Mother permits child occasionally to engage in "messy" types of play	___	___
8. Mother spontaneously praises child's qualities of behavior twice during visit	___	___
9. When speaking of or to child, mother's voice conveys positive feeling	___	___
10. Mother caresses or kisses child at least once during visit	___	___
11. Mother shows some positive emotional responses to praise of child offered by visitor	___	___
SUBSCORE	___	

* May require an interview probe unless can be observed.

**Will require interview probe unless mother mentions spontaneously

Yes No

II. AVOIDANCE OF RESTRICTION AND PUNISHMENT

- | | | |
|---|-----|-----|
| 12. Mother does not shout at child during visit | ___ | ___ |
| 13. Mother does not express overt annoyance with or hostility toward child | ___ | ___ |
| 14. Mother neither slaps nor spansks child during visit | ___ | ___ |
| **15. Mother reports that no more than one instance of physical punishment occurred during the past week. | ___ | ___ |
| 16. Mother does not scold nor derogate child during visit | ___ | ___ |
| 17. Mother does not interfere with child's actions or restrict child's movements more than three times during visit | ___ | ___ |
| *18. At least ten books are present and visible | ___ | ___ |
| *19. Family has a pet | ___ | ___ |

SUBSCORE

III. ORGANIZATION OF PHYSICAL AND TEMPORAL ENVIRONMENT

- | | | |
|--|-----|-----|
| **20. When mother is away, care is provided by one of three regular substitutes | ___ | ___ |
| **21. Someone takes child into grocery store at least once a week | ___ | ___ |
| **22. Child gets out of house at least four times a week | ___ | ___ |
| **23. Child is taken regularly to doctor's office or clinic for check-ups and preventive health care | ___ | ___ |
| *24. Child has a special place in which to keep his toys and "treasures" | ___ | ___ |
| 25. Child's play environment appears safe and free of hazards | ___ | ___ |

SUBSCORE

YES NO

IV. PROVISION OF APPROPRIATE PLAY MATERIALS

*26. Child has one or more muscle activity toys or pieces of equipment	___	___
*27. Child has push or pull toy	___	___
*28. Child has stroller or walker, kiddie car, scooter, or tricycle	___	___
29. Mother provides toys or interesting activities for child during interview	___	___
*30. Provides learning equipment appropriate to age: mobile, table and chairs, high chair, play pen	___	___
*31. Provides learning equipment appropriate to age: cuddly toy or role-playing toy	___	___
*32. Provides eye-hand coordination toys: items to go in and out of receptacle, fit together toys, beads	___	___
*33. Provides eye-hand coordination toys that permit combinations: stacking or nesting toys, blocks or building toys	___	___
*34. Provides toys for literature and music (books, records, toy musical instruments)	___	___
SUBSCORE		___

V. MATERNAL INVOLVEMENT WITH CHILD

35. Mother tends to keep child within visual range and to look at him often	___	___
**36. Mother "talks" to child while doing her work	___	___
*37. Mother consciously encourages developmental advance	___	___
*38. Mother invests "maturing" toys with value via her attention	___	___
**39. Mother structures child's play periods	___	___
*40. Mother provides toys that challenge child to develop new skills	___	___
SUBSCORE		___

YES No

VI. OPPORTUNITIES FOR VARIETY IN DAILY STIMULATION

- | | | |
|--|-------|-------|
| **41. Father provides some caregiving every day | _____ | _____ |
| **42. Mother reads stories to child at least three times weekly | _____ | _____ |
| **43. Child eats at least one meal per day with mother and father | _____ | _____ |
| **44. Family visits or receives visits from relatives approximately once a month | _____ | _____ |
| *45. Child has three or more books of his own | _____ | _____ |
-

SUBSCORE _____

HOME INTERVIEW

I.D. _____

I. TRIPS AND VISITS TO AND FROM HOME

- 3 Y N 22. Out of house (4/wk)
- 3 Y N 23. Grocery store (1/wk)
- 3 Y N 24. Doctor regularly
- 6 Y N 44. Family visit/trips (1/mo)
- 3 Y N 20. Substitute care (3 persons)
- 6 Y N 41. Father care (daily)

II. TOYS AVAILABLE TO CHILD

- 4 Y N 26. Muscle toy
- 4 Y N 28. Riding toy
- 4 Y N 27. Push/pull toy
- 4 Y N 30. Learning toy (age appx. 1)
- 4 Y N 31. Cuddly, role-play toy (age appx. 1)
- 4 Y N 32. Eye-hand coord. toy (1)
- 4 Y N 33. Eye-hand coord. w/combinations (1)
- 4 Y N 34. Music & literature toy (1 ea.)
- 6 Y N 45. Personal books (3)
- 6 Y N 42. Reads stories (3/wk)
- 3 Y N 24. Toy box or closet
- 2 Y N 19. Pet
- 2 Y N 18. 10 books

III. HOME ROUTINE

- 5 Y N 36. Talks to child, working
- 5 Y N 39. Structures play period
- 6 Y N 43. Eats with parents (1/day)
- 5 Y N 38. Invests attention in maturing toys
- 5 Y N 37. Conscious teaching attitude with toys
- 5 Y N 40. Estimates ability and challenges with toys
- 1 Y N 7. Messy play
- 2 Y N 15. No more than 1 phys. punish. in last week

IV. OBSERVATIONS

- 1 Y N 11. Shows + response when child is praised
- 1 Y N 1. Spontaneous vocalization to child (2)
- 1 Y N 2. Gives vocal response to vocalization (1)
- 1 Y N 3. Teaches name, person or object (1)
- 1 Y N 4. Understandable speech
- 1 Y N 5. Initiates verbal interchanges
- 1 Y N 6. Gives adequate answers
- 1 Y N 8. Spontaneously praises child's qualities (2)
- 1 Y N 9. Conveys + feeling toward child
- 1 Y N 10. Kiss/caress (1)
- 2 Y N 12. Does not raise voice unnecessarily
- 2 Y N 13. Does not express annoyance or hostility
- 2 Y N 14. Does not slap or spank child
- 2 Y N 16. Does not scold or run down child to his face
- 2 Y N 17. Does not interfere or restrict child (3)
- 3 Y N 25. Play environment free of hazards
- 4 Y N 29. Provides interesting activities during interview
- 5 Y N 35. Tends to keep child in visual contact

APPENDIX C: THE PARENTAL ATTITUDE
RESEARCH SCALE

PARS: INSTRUCTIONS
(TO BE READ TO MOTHER)

This is a list of statements which some parents agree with and some parents disagree with. There are no right or wrong answers and we would like to know what you as a parent think.

I will read each one of these statements to you and you may follow along on your copy if you wish. After I have read each statement, please indicate to me whether you "strongly agree", "mildly agree", "mildly disagree", or "strongly disagree" with the statement. Please give me your first reaction.

Example:

Children should eat all the food on their plate.

Do you "strongly agree", "mildly agree", "mildly disagree", or "strongly disagree" with this statement?

(Pause for response.)

Very good. We will go through each of these statements in this same manner. Do you have any questions? (Pause for response.)

Remember, there are no right or wrong answers. We want to know what you think.

	Agree	Disagree
1. Kids should be able to talk with parents if they think their own ideas are better.	A a	d D
2. A parent should protect her kids from life's problems.	A a	d D
3. A home is the most important thing to a good mother.	A a	d D
4. Some kids are so bad that they must be taught to fear adults.	A a	d D
5. No matter what we do, life seems to get the best of us, and we can't control that.	A a	d D
6. In raising children it's best to keep them close to home.	A a	d D
7. People who think you can get along in marriage without arguments are wrong.	A a	d D
8. A child will thank you later on for strict training.	A a	d D
9. Kids will get on any woman's nerves if she is with them all day.	A a	d D
10. It's best if a child never starts wondering if his parent's views are right.	A a	d D
11. Behaving and respect for authority are the most important things children should learn.	A a	d D
12. A child should be taught to avoid fighting no matter what happens.	A a	d D
13. It is best to keep your kids away from policemen.	A a	d D
14. Parents should give in to the kids some rather than expecting the kids to always obey the parents.	A a	d D
15. There is no excuse for a child sitting around doing nothing because there are so many things he needs to learn about life.	A a	d D
16. If you let kids talk about their troubles they end up complaining even more.	A a	d D
17. Mothers could do a better job with the kids if fathers were kinder.	A a	d D
18. My spouse uses sex to take advantage of me.	A a	d D
19. The mother should go ahead and make the rules for the home so the kids and husband can avoid unnecessary troubles.	A a	d D

	Agree	Disagree
20. New ideas are O.K., but parents should see things work before they get excited.	A a	d D
21. Kids would be better if parents would show an interest in their affairs.	A a	d D
22. Most kids should be toilet trained by 15 months of age.	A a	d D
23. Every family should have goals in mind that they want to reach in 10 years.	A a	d D
24. I like people for their special qualities rather than "who" they are in the community.	A a	d D
25. People usually do things that will help them get ahead rather than worry about others.	A a	d D
26. When kids think family rules are wrong they should feel free to tell parents about it.	A a	d D
27. A parent should do her best to avoid disappointments for the child.	A a	d D
28. Women who want lots of things seldom make good mothers.	A a	d D
29. It is often necessary to beat the mischief out of a kid.	A a	d D
30. There is not much sense in working hard because we can't get ahead in life.	A a	d D
31. Kids can learn more from their parents than they can from other people.	A a	d D
32. Sometimes it is necessary for me to tell off my spouse in order to get my rights.	A a	d D
33. Strict discipline develops a fine strong character.	A a	d D
34. Parents often feel that they can't stand their kids a moment longer.	A a	d D
35. A parent should never be made to look wrong to a child.	A a	d D
36. If kids would talk less and work more, the whole family would be better off.	A a	d D
37. A child should be taught to always come to his parents or teachers rather than fight when he is in trouble.	A a	d D
38. Almost all "big shots" are out to do you harm.	A a	d D
39. Parents must earn the respect of their kids by being fair with them at all times.	A a	d D

	Agree	Disagree
40. Kids who don't try hard for success will feel they have missed out later in life.	A a d D	
41. Parents who start a child talking about his worries don't know that sometimes it's better to just leave well enough alone.	A a d D	
42. Husbands could do their part around the house if they were not so selfish.	A a d D	
43. There is something wrong with a child that asks questions about sex.	A a d D	
44. Children and husbands do better when the mother is strong enough to settle most of the family problems.	A a d D	
45. Problems in the home have either yes or no answers to them.	A a d D	
46. Laughing at children's jokes and reading them stories makes the family run smoothly.	A a d D	
47. The sooner a child learns to walk the better off he will be.	A a d D	
48. It doesn't do any good to plan ahead because you will just be disappointed.	A a d D	
49. Parents must be careful not to trust most school teachers because they are too educated.	A a d D	
50. Parents should do things they want to do rather than what the community says they should.	A a d D	
51. A child has a right to his own ideas and should be encouraged to tell others about them.	A a d D	
52. A child should be protected from hard work.	A a d D	
53. A woman has to decide between a well run home or lots of friends to visit with.	A a d D	
54. Few parents get any thanks for all they have done for their kids.	A a d D	
55. No weakness or problem can hold us back if we have enough will power.	A a d D	
56. What kids don't know, won't hurt them.	A a d D	
57. No matter how much you are in love with your spouse, there are differences that lead to arguments.	A a d D	

	Agree	Disagree
58. Kids that have firm rules to obey grow up to be the best adults.	A a	d D
59. It's hard to find a parent who can be nice to children all day.	A a	d D
60. Kids should not learn things outside the home that makes them question their parents ideas.	A a	d D
61. There is nothing worse than a child that does not feel great love and respect for his parents.	A a	d D
62. There is no good reason for a child to hit another child.	A a	d D
63. Children should not associate with leaders of the school.	A a	d D
64. Children are too often made to agree with the parents, and this is not fair.	A a	d D
65. Parents should teach their kids to get ahead in life and not waste time.	A a	d D
66. Kids pester you with little upsets all the time if you aren't careful from the first.	A a	d D
67. When a mother does a poor job with the children it is usually because the father won't help out.	A a	d D
68. Sex is really only enjoyable for my spouse.	A a	d D
69. A mother has to do the planning because she is the one who knows what is going on in the home.	A a	d D
70. Parents can be divided into just two groups: the good and the bad.	A a	d D
71. Parents who are interested in hearing about their kids parties, friends, and fun, help them grow up right.	A a	d D
72. The sooner a child can break from parental control the better off he will be to handle his own problems.	A a	d D
73. People that have big plans for the future are just fooling themselves.	A a	d D
74. Being a "good" persons and a friend on the job means more than "skill" in the job.	A a	d D
75. Work is really kind of fun and the money earned is not really as important as people let on.	A a	d D
76. A child's ideas can be used when making family decisions.	A a	d D

	Agree	Disagree
77. Parents should not allow their kids to experience difficult situations.	A a	d D
78. A mother's place is in the home.	A a	d D
79. Kids should be nicer to their parents since their parents suffer so much for them.	A a	d D
80. Most people don't realize just how much our lives are controlled by secret plots and crooked deals.	A a	d D
81. Parents who encourage their kids to learn new things are only asking for trouble.	A a	d D
82. There are some things that can't be settled without a fight with your spouse.	A a	d D
83. Most kids need more discipline and punishment.	A a	d D
84. Raising children is a hard job.	A a	d D
85. The child should not question the thinking of his parents.	A a	d D
86. The parent should be the leader and the authority of the family.	A a	d D
87. Children should not box or fight with each other because it makes them mean.	A a	d D
88. Most of our problems could be solved if we could stay away from leaders and bosses.	A a	d D
89. As often as is possible, the parent should treat the child as an equal.	A a	d D
90. A child who is busy all the time will most likely be happier than a child who sits around.	A a	d D
91. If a child seems upset it's best to leave him alone and not talk about it.	A a	d D
92. If wives could get their wishes they would ask that their husbands be more understanding.	A a	d D
93. Young boys and girls should not see each other undressed.	A a	d D
94. The whole family does fine when the mother runs things.	A a	d D
95. Reasons for kids' behavior aren't very important to the good parent.	A a	d D

	Agree	Disagree
96. When parents have fun with their kids, the kids are more likely to listen to them.	A a d D	
97. A parent should make an effort to teach her child to take care of himself very early in his life.	A a d D	
98. It's best to think ahead only as far as tomorrow.	A a d D	
99. Good friends are few and far between.	A a d D	
100. I do things because I want to, not because someone tells me to.	A a d D	
101. When a child is in trouble he should be able to talk about it with his parents.	A a d D	
102. A child should not be made to work if he doesn't want to.	A a d D	
103. A good mother will have enough fun within the family.	A a d D	
104. Parents that want their children to grow up and amount to something must keep after them.	A a d D	
105. More people get ahead because of fate or chance rather than by working hard.	A a d D	
106. Kids that go out and learn new things only come home and ask stupid questions.	A a d D	
107. In many cases, divorce or separation is the answer to husband-wife problems.	A a d D	
108. Kids are really happier under strict training.	A a d D	
109. It's natural for a parent to "blow her top" when kids are selfish and demanding.	A a d D	
110. There is nothing worse than letting a child hear criticisms of his parents.	A a d D	
111. Nobody really ever learned anything important without suffering.	A a d D	
112. Most parents like a quiet child more than a child that is "scrappy".	A a d D	
113. Nowadays more and more leaders are sticking their nose into matters that aren't any of their business.	A a d D	
114. Parents and children should give into each other as much as they can.	A a d D	

	Agree	Disagree
115. The sooner a child learns that a wasted minute is lost forever the better off he will be.	A a d D	
116. Kids usually try to keep you listening to their troubles by making up stories.	A a d D	
117. Few husbands think that a wife needs some fun once in a while.	A a d D	
118. A young child should be protected from hearing about sex.	A a d D	
119. A married woman knows that she will have to take the lead in family matters.	A a d D	
120. Everyone should have complete faith in some supernatural power whose decisions he obeys without question.	A a d D	
121. When the family does things together, kids feel close to you and can talk to you easier.	A a d D	
122. A child should be taken away from the bottle or breast as soon as possible.	A a d D	
123. The main goal of a parent is to see that the kids stay out of trouble.	A a d D	
124. People who don't succeed in life get just what they deserve.	A a d D	
125. Work is a way of life and it should have rewards other than money.	A a d D	

PARS SCORING INSTRUCTIONS

Enter the number 4, 3, 2, or 1 in each square according to the item direction. A plus (+) is shown in the box where Strongly Agree should receive a value of 4. A minus (-) is shown in the box where Strongly Disagree should receive a value of 4. Thus, if the subject responded with Mildly Disagree to item #51, a 2 would be entered in the third cell of the first row. Total score is the sum of entries across rows. Since items are arranged in rotating order by scales, all items in a given row belong to the same scale. Hence, summing across gives the score for that scale.

PARS SCORE SHEET

<u>SCALE TITLE</u>						<u>SCALE SCORE</u>
Encouraging Verbalization	1+	26+	51+	76+	101+	_____
Fostering Dependency	2-	27-	52-	77-	102-	_____
Seclusion of the Mother	3-	28-	53-	78-	103-	_____
Breaking the Will	4-	29-	54-	79-	104-	_____
Fatalism	5-	30-	55+	80-	105-	_____
Restriction of New Experiences	6-	31-	56-	81-	106-	_____
Marital Conflict	7+	32-	57+	82-	107-	_____
Strictness	8-	33-	58-	83-	108-	_____
Irritability	9-	34+	59-	84+	109+	_____
Excluding Outside Influences	10-	35-	60-	85-	110-	_____
Authoritarianism	11-	36-	61-	86+	111-	_____
Suppression of Aggression	12-	37-	62-	87-	112-	_____
Alienation from Authority Figures	13-	38-	63-	88-	113-	_____
Equalitarianism	14+	39+	64+	89+	114+	_____
Approval of Activity	15-	40-	65-	90-	115-	_____
Avoidance of Communication	16-	41-	66-	91-	116-	_____
Inconsiderateness of the Husband	17-	42-	67-	92-	117-	_____
Suppression of Sex	18-	43-	68-	93-	118-	_____
Ascendance of the Mother	19-	44-	69-	94-	119-	_____
Concrete vs. Abstract Thinking	20-	45-	70-	95-	120-	_____
Comradship and Sharing	21+	46+	71+	96+	121+	_____
Acceleration of Development	22-	47-	72-	97-	122-	_____
Family Goals	23+	48-	73-	98-	123-	_____
Judgement of Others	24+	49-	74+	99-	124-	_____
Intrinsic vs. Extrinsic Values	25+	50+	75+	100+	125+	_____

APPENDIX D: AUTHORITARIAN SUB-SCALE OF THE
PARENTAL ATTITUDE RESEARCH INSTRUMENT

AUTHORITARIANISM SUB-SCALE OF THE PARENTAL
ATTITUDE RESEARCH INSTRUMENT

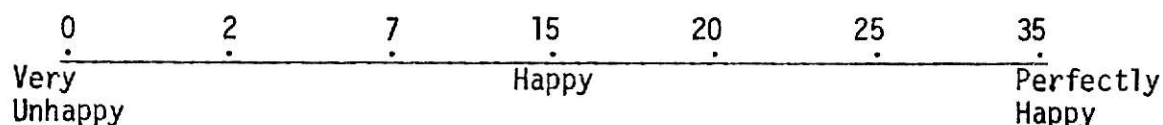
1. More parents should teach their children to have unquestioning loyalty to them.
2. The child should be taught to revere his parents above all other grown-ups.
3. A child soon learns that there is no greater wisdom than that of his parents.
4. Parents deserve the highest esteem and regard of their children.
5. Loyalty to parents comes before anything else.

SCORING: This sub-scale is scored in the same fashion as the PARS. All item directions are negative.

APPENDIX E: MARITAL ADJUSTMENT TEST

MARITAL ADJUSTMENT TEST

1. Check the dot on the scale line which best describes the degree of happiness, everything considered, of your present marriage. The middle point, "happy" represents the degree of happiness which most people get from marriage, and the scale gradually ranges on one side to those few who are very unhappy in marriage, and on the other, to those few who experience extreme joy or felicity in marriage.



State the approximate extent of agreement or disagreement between you and your mate on the following items. Please check each column.

	Always Agree	Almost Always Agree	Occas- sionally Disagree	Fre- quently Disagree	Almost Always Disagree	Always Disagree
2. Handling fa- mily finances	5	4	3	2	1	0
3. Matters of recreation	5	4	3	2	1	0
4. Demonstrations of affection	8	6	4	2	1	0
5. Friends	5	4	3	2	1	0
6. Sex relations	15	12	9	4	1	0
7. Conventionality (right, good, & proper conduct)	5	4	3	2	1	0
8. Philosophy of life	5	4	3	2	1	0
9. Ways of dealing with in-laws	5	4	3	2	1	0
10. When disagreements arise, they usually result in: Husband giving in <u>0</u> Wife giving in <u>2</u> Agreement by mutual give and take <u>10</u>						

11. Do you and your mate engage in outside interests together?
All of them 10 Some of them 8 Very few of them 3
None of them 0
- *12. In leisure time do you generally prefer: To be on the go _____
To stay at home _____
Does your mate generally prefer: To be on the go _____
To stay at home _____
13. Do you ever wish you had not married? Frequently 0 Occasionally 3
Rarely 8 Never 15
14. If you had your life to live over, do you think you would:
Marry the same person 15 Marry a different person 0
Not marry at all 1
15. Do you confide in your mate: Almost never 0 Rarely 2
In most things 10 In everything 10

* Score: (Stay at home for both, 10 points;
On the go for both, 3 points;
Disagreement, 2 points)

APPENDIX F: CORRELATIONS AND PARTIAL CORRELATIONS
BETWEEN EACH OF THE SUBSCALES, MDI, PDI, SES,
AND FULL SCALE SCORES WITH MEANS AND STANDARD DEVIATIONS

CORRELATIONS AND PARTIAL CORRELATIONS BETWEEN EACH
OF THE SUBSCALES, MDI, PDI, SES, AND FULL SCALE SCORES
WITH MEANS ($\bar{x}$) AND STANDARD DEVIATIONS (SD)

	MENTAL DEVELOPMENT		SES	MOTOR DEVELOPMENT		HOME TOTAL
	r	r_{partial}^a	r	r	r_{partial}^a	r
HOME ENVIRONMENT INVENTORY SUBSCALES $\bar{x}_{\text{TOTAL}} = 37.5$, SD = 5.8						
Emotional and Verbal Responsivity of the Mother to the Child						
Total	.44*	.35	.30	.17	.05	.53*
Males	.40	.39	.11	-.34	-.16	.29
Females	.52	.08	.56*	.58*	.35	.83*
Avoidance of Restriction and Punishment						
Total	.28	-.10	.61*	.30	.07	.58*
Males	.26	.13	.74*	.17	.03	.62*
Females	.32	-.17	.45	.48	.29	.54
Organization of the Physical and Temporal Environment						
Total	.43*	.12	.61*	.44*	.26	.63*
Males	.09	-.06	.56*	.18	.08	.54*
Females	.71*	.28	.69*	.68*	.43	.75*
Provision of Appropriate Play Materials						
Total	.60*	.40*	.57*	.48*	.20	.90*
Males	.52*	.48	.43	.24	.17	.87*
Females	.68*	.08	.74*	.55*	.16	.94*
Maternal Involvement with the Child						
Total	.60*	.37	.65*	.37*	.15	.87*
Males	.50*	.45	.56*	.21	.12	.85*
Females	.69*	.09	.74*	.52	.08	.90*

* Correlations significant ($p < .05$)

^a Partial correlations controlling for SES

	<u>MENTAL DEVELOPMENT</u>		<u>SES</u>	<u>MOTOR DEVELOPMENT</u>		<u>HOME TOTAL</u>
	<u>r</u>	<u>r</u> _{partial} ^a	<u>r</u>	<u>r</u>	<u>r</u> _{partial} ^a	<u>r</u>
Opportunities for Variety in Daily Stimulation						
Total	.47*	.33	.38*	.15	-.01	.74*
Males	.42	.38	.23	-.01	.06	.71*
Females	.64*	.13	.67*	.48	.09	.85*
						<u>PARS TOTAL</u> <u>r</u>
PARENTAL ATTITUDE RESEARCH SCALE SUB-SCALES $\bar{x}_{TOTAL} = 392, SD = 36.7$						
Marital Conflict						
Total	-.15	-.36	.23	.04	-.06	.10
Males	-.03	-.17	.49	.20	.12	.08
Females	-.34	-.27	.24	-.11	.05	.15
Irritability						
Total	.12	-.01	.23	.26	.19	.08
Males	.08	.06	.13	.04	.02	.07
Females	.13	-.37	.33	.45	.33	.16
Inconsiderateness of the Husband						
Total	.13	-.06	.32	-.07	-.24	.44*
Males	-.15	.23	.27	-.49	-.58*	.72*
Females	.35	.04	.38	.33	.13	.43
Seclusion of the Mother						
Total	.28	.16	.28	.09	-.03	.50*
Males	-.01	-.04	.14	-.13	-.16	.48
Females	.53	.35	.43	.32	.06	.53
Ascendence of the Mother						
Total	-.08	-.05	-.07	-.22	-.21	.46*
Males	.02	.02	.01	-.49	-.50	.39
Females	-.11	.18	-.22	-.35	.65*	.44

	<u>MENTAL DEVELOPMENT</u>		<u>SES</u>	<u>MOTOR DEVELOPMENT</u>		<u>PARS TOTAL</u>
	<u>r</u>	<u>r</u> ^a _{partial}	<u>r</u>	<u>r</u>	<u>r</u> ^a _{partial}	<u>r</u>
Encouraging Verbalization						
Total	.23	-.05	.46*	.18	-.01	.13
Males	.19	.10	.42	.14	.06	.20
Females	.27	-.46	.52	.22	-.16	.11
Avoidance of Communication						
Total	.21	-.11	.50*	.08	-.16	.60*
Males	.06	-.14	.66*	.06	-.27	.80*
Females	.39	.28	.30	.29	.14	.46
Restriction of New Experiences						
Total	.22	-.01	.39*	.22	-.07	.33
Males	-.19	-.36	.47	.12	.02	.35
Females	.48	.39	.34	.31	.13	.33
Excluding Outside Influences						
Total	.10	-.12	.34	-.13	-.31	.49*
Males	.01	-.09	.37	-.43	-.56*	.64*
Females	.25	-.09	.33	.35	.19	.36
Alienation of Authority Figures						
Total	.24	-.12	.56*	.17	-.08	.62*
Males	.04	-.18	.69*	-.16	-.42	.77*
Females	.42	.01	.47	.51	.31	.50
Fostering Dependency						
Total	.02	.02	.01	.13	.14	-.03
Males	.13	.11	.12	.03	.01	.11
Females	-.22	-.08	-.20	.13	.35	.16

	MENTAL DEVELOPMENT		SES	MOTOR DEVELOPMENT		PARS TOTAL
	<u>r</u>	<u>r</u> _{partial} ^a	<u>r</u>	<u>r</u>	<u>r</u> _{partial} ^a	<u>r</u>
Breaking the Will						
Total	.41*	.20	.46*	.07	-.15	.55*
Males	.56*	.52	.52*	-.15	-.31	.65*
Females	.31	-.10	.40	.47	.31	.51
Strictness						
Total	.04	.13	-.12	-.07	-.02	.31
Males	.25	.29	-.11	-.36	-.34	.32
Females	.15	-.08	.12	.24	.41	.35
Approval of Activity						
Total	.23	.03	.36	.14	-.01	.65*
Males	-.07	-.16	.33	-.58*	-.70*	.57*
Females	.49	.27	.42	.85*	.83*	.68*
Acceleration of Development						
Total	.24	.09	.31	.18	.06	.33
Males	.09	.04	.24	-.23	-.29	.32
Females	.37	.03	.56*	.56*	.43	.35
Suppression of Sex						
Total	-.08	-.29	.28	-.09	-.23	.27
Males	.07	.06	.49	.01	-.11	.45
Females	-.29	-.38	-.13	-.16	-.11	-.29
Suppression of Aggression						
Total	-.43*	-.34	-.28	-.07	.05	-.27
Males	-.44	-.40	-.27	.05	.11	-.18
Females	-.42	-.33	-.08	-.12	.11	-.41

	MENTAL DEVELOPMENT		SES	MOTOR DEVELOPMENT		PARS TOTAL
	<u>r</u>	<u>r</u> _{partial} ^a	<u>r</u>	<u>r</u>	<u>r</u> _{partial} ^a	<u>r</u>
Authoritarianism						
Total	.21	.01	.35	.09	-.07	.51*
Males	-.10	-.20	.37	-.30	-.42	.62*
Females	.45	.25	.38	.45	.30	.39
Equalitarianism						
Total	-.06	-.07	-.01	.13	.14	-.22
Males	-.25	-.27	.06	-.08	-.10	-.17
Females	-.01	.22	.13	.24	.42	-.05
Comradship and Sharing						
Total	.04	-.07	.16	.19	.14	-.16
Males	-.17	-.19	.08	.33	.33	-.12
Females	.12	-.17	.22	.03	-.15	-.06
Fatalism						
Total	.36	.11	.49*	-.24	-.56*	.41*
Males	.42	.35	.59*	-.36	-.62*	.63*
Females	.33	-.02	.38	-.09	-.47	.26
Concrete vs. Abstract Thinking						
Total	.33	.06	.51*	.12	-.10	.56*
Males	.25	.15	.52*	-.11	-.27	.79*
Females	.38	.16	.51	.31	-.02	.48
Family Goals						
Total	.15	-.26	.57*	-.01	-.33	.46*
Males	.05	-.17	.70*	-.15	-.42	.55*
Females	.39	.01	.43	.31	.06	.38

	MENTAL DEVELOPMENT		SES	MOTOR DEVELOPMENT		PARS TOTAL
	<u>r</u>	<u>r</u> ^a _{partial}	<u>r</u>	<u>r</u>	<u>r</u> ^a _{partial}	<u>r</u>
Judgement of Others						
Total	.45*	.33	.35	.07	-.09	.43*
Males	.24	.21	.16	-.23	-.27	.38
Females	.74*	.50	.63*	.50	.16	.49
Intrinsic vs. Extrinsic Value						
Total	-.44*	-.36	-.26	-.08	.03	-.12
Males	-.25	-.25	-.04	.24	.25	-.27
Females	-.61*	-.28	-.58*	-.37	-.01	-.23
SOCIOECONOMIC STATUS SUB-SCALES $\bar{X}_{TOTAL} = 40.4, SD = 10.2$						
Father's Education						
Total	.50*	-.03	.90*	.36	-.02	
Males	.18	-.08	.90*	.16	-.07	
Females	.79*	.01	.90*	.58*	.03	
Mother's Education						
Total	.52*	.07	.85*	.41*	.13	
Males	.07	-.22	.81*	.20	.50	
Females	.87*	.40	.89*	.62*	.15	
Income						
Total	.41*	-.08	.78*	.26	-.10	
Males	.23	.06	.81*	.14	-.04	
Females	.60*	-.21	.76*	.41	-.14	
Father's Occupation						
Total	.48*	-.02	.85*	.34	-.03	
Males	.17	-.08	.87*	.12	-.13	
Females	.78*	.14	.85*	.60*	.17	

HOME ENVIRONMENT, MATERNAL ATTITUDES, MARITAL ADJUSTMENT,
AND SES: THEIR ASSOCIATION WITH MENTAL AND MOTOR
DEVELOPMENT OF TWO-YEAR-OLD CHILDREN

BY

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In an attempt to determine why some children are better prepared to enter school than others, a number of studies have been conducted which show that a diverse range of environmental measures made during the first six months of life are strongly related to later mental development.

In an attempt to validate certain instruments for use as predictors of infant mental development and simultaneously validate the concepts that they measure, the Inventory of the Home Learning Environment (HOME) (Caldwell, Note 1) and the Parental Attitude Research Scale (PARS) (Cromwell, Note 2), were selected to serve as the primary environmental instruments. The short Marital Adjustment Test (MAT) (Locke and Wallace, 1959) and the Authoritarianism sub-scale of the Parental Attitude Research Instrument (Schaefer and Bell, 1958) were selected to establish content validity of certain PARS sub-scales. A socioeconomic status index (SES) was included as both an environmental measure and as a control measure. The Bayley Scales of Infant Development (Bayley, 1969) were utilized to assess mental and motor development.

The method used was to administer each of the instruments concurrently to the appropriate member of 27 mother-child dyads. Data from Elardo (1975) were presented to partially justify concurrent administration. Subjects were obtained through various sources in Topeka and Manhattan, Kansas, and ranged from middle-lower to middle class. The 15 male and 12 female children were 24 to 29 months of age. Scores for

each of the scales were derived and from these scores correlations and partial correlations controlling for SES were computed for the total as well as the male and female samples.

Results indicate high intercorrelation between all major environmental measures except the MAT. The MAT produced significant correlations with SES.

Predictive validity was established for the HOME ($r_{MDI} = .63, p < .05$) as well as a high degree of internal reliability. This establishment of validity and reliability for the HOME also validates concepts that were used in the construction of the HOME. Predictive validity for the PARS was established ($r_{MDI} = .41, p < .05$), however, the general internal reliability of the instrument is poor. Correlations between the PARS sub-scores and MDI ranged between $r = .45$ and $r = -.45$ with a full range of values between these. This does not allow the validation of many of the concepts used in the construction of the PARS.

The results relating to the MAT indicate high four-way interaction between the MAT, MDI, SES and sex. This interaction suggests the possibility of inverse relationship between the marital adjustment of the mother and mental development for boys.