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ABSTRACT

The Infant Health and Development Program (IHDP) is an intervention designed to facilitate social development in low birthweight (LBW) children. This report does not deal with the full complexity of operations involving program components as they interact to shape social competence. Rather, the report represents a first or "setting" stage, a look at the ecology of social development in LBW children independent of intervention. The study's purpose was threefold: (1) to look at simple relationships between various aspects of home environment and components of social competence; (2) to study primacy and recency effects with respect to social competence at the age of 3 years; and (3) to identify interactions among home environment components that relate to social competence. Participants in the study were 549 children who had participated in the IHDP. The measures used were the HOME Inventory, Achenbach Child Behavior Checklist, Richman-Graham Behavior Checklist, Adaptive Social Behavior Inventory, and measures of mother-child interactions. As expected, the home environments of children with low birth weight were related to the social competence of the children. Significant relations were obtained from parental ratings of children's social problems and adaptive behavior and from direct observations of children's social behavior in problem-solving situations. Results suggest that intervention may have an effect when a child has a reasonably responsive environment in the first year of life. Five tables show the statistical correlations. Contains 7 references. (LB)

Home Environment and Social Competence: A Look at Alternative Models of Environmental Action

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Researchers interested in the development of LBW children have not tended to focus on social competence. Because of the presumed vulnerability of LBW children, most research has concentrated on other aspects of development (cognitive, motor, growth). There have, of course, been exceptions (Lipsitt & Field, 1982), but even these investigations have more often targeted early social responsiveness not the full range of adaptive social functioning.

IHDP was concerned with all aspects of development in LBW children, including socio-emotional development. For that reason, a variety of measures designed to capture componens of social competence were included in the study protocol: observed social interactions, ratings of problem behaviors, and ratings of adaptive social behaviors. In sum, a multi-method approach to assessment of social competence was used.

The IHDP intervention was designed to facilitate social development both *directly* by involving children in productive, supportive social encounters with adults and other children and *indirectly* through support and instruction given to parents. It was not assumed that effects on the child would be simple products of either of these program activities. Rather, the ecological/general systems framework which guided the study identified both child factors and environmental factors that were likely to interact with program components in shaping the course of early social competence. In essence, the model allowed that a multi-faceted, multi-level system of ecological and organismic "forces" in dynamic transaction with programmatic activities would guide the course of development. The particular manner in which the various sets of "forces" operate was not specified (i.e., whether these other forces would serve to moderate the impact of the intervention, mediate its influence, etc.). Several plausible operations were identified and ways of examining them allowed for in the study design. But, since the primary intent of the clinical trial was to look at "main effects" of treatment, specific hypotheses regarding alternative operations of intervening variables were not constructed -- simply the possibility recognized.

This report does not deal with the full complexity of operations involving program, ecological, and organismic components as they intereact to shape social competence. Rather, this report represents a first or "setting" stage, a look at the ecology of social development in LBW children independent of intervention. Information regarding this presumably simpler sysatem seems a useful beginning point from which to develop information about the more complex system which includes intervention.

Specifically, the report has three purposes: 1) to look at simple relationships between various aspects of home environment and components of social competence; 2) to examine primacy and recency "effects" with respect to social competence at age three; and 3) to identify interactions among home environment components with respect to their relationship to social competence.

Methods

Sample

Participants in the study were 549 children from the Follow-up group of the Infant Health and Development Program. The diverse sample was described earlier in the symposium; thus, the characteristics of the sample will not be repeated in this report.

Measures

HOME Inventory. The Infant-Toddler (IT-HOME) and Early Childhood (EC-HOME) versions of the Home Observation for Measurement of the Environment were administered to families of participating children at one and three years respectively. HOME is designed to measure the quality and quantity of stimulation and support available to a child in the home environment. It utilizes both observation and interview done during the context of a home visit lasting about an hour. The home visitor acts so as to allow natural interactions between caregiver and child. For the IHDP sample, the Inventory was given along with several other measures given to the mother. Extensive training was done on the HOME and each home assessor was certified as meeting necessary standards for scale administration. Oversight control of scores was managed by the central IHDP staff throughout the data gathering process.

IT-HOME consists of 45 binary choice items clustered into six subscales: 1) Responsivity, 2) Acceptance, 3) Organization, 4) Learning Materials, 5) Involvement, and 6) Variety. EC-HOME consists of 55 items clustered into eight subscales: 1) Learning Materials, 2) Language Stimulation, 3) Physical Environment, 4) Responsivity, 5) Learning Stimulation, 6) Modeling, 7) Variety, and 8) Acceptance. Substantial validity and reliability data are presented in the test manual (Caldwell & Bradley, 1984).

Achenbach Child Behavior Checklist. The CBCL is a widely used measure of maladaptive behavior in children. Information needed to score the CBCL is collected from the child's parent. As stated earlier in the symposium, the CBCL was administered to mothers during the context of home visits when children were two and three years old. For purposes of this report, three summary scores were used (internalizing problems, externalizing problems, total problems). Four subscale scores were also analyzed (social withdrawal, depression, aggression, destruction). Only the three year data were analyzed.

Richman-Graham Behavior Checklist. The RG-BC was administered to mothers during the same home visits as the CBCL. RG-BC also measures problem behaviors. The measure, described earlier in the symposium results in a single total score. Only the 3-year data were analyzed.

Adaptive Social Behavior Inventory. As earlier described in the symposium, ASBI is designed to assess children's adaptive social competence. It results in three summary scores: 1) Expressiveness, 2) Compliance, and 3) Disruptiveness. ASBI was administered during the 3-year home visit along with CBCL and RG-BC.

Mother-Child Interactions. All mother-child dyads were videotaped at 30 months during involvement with several problem solving tasks. Rating systems developed by Matas, Arend & Sroufe (1978) and Crawley and Spiker (1983) were employed to code the interactions. Variables analyzed included: 1) Persistence, 2) Enghusiasm, 3) Positive Affect, 4) Negative Affect, and 5) Mutuality. The specific procedures were described earlier in the symposium.

Results

Bivariate Correlations

Tables 1 & 2 display simple bivariate correlations between HOME scores and the four measures of child social competence. As expected, there were numerous significant coefficients, but most are low (< .4). Correlations between IT-HOME and measures of child social competence are notable in several respects. First, with the exception of the Organization subscale, there was little variation in the magnitude of association between various HOME subscales and CBCL scores. With the exception of the Acceptance subscale, there was little variation in correlations between IT-HOME subscales and GR-BC. Second, with one exception (the correlation between Responsivity and Internalizing Problems), coefficients for Internalizing Problems and Externalizing Problems and IT-HOME scores were similar. Similarly, with one exception (the correlation between Learning Materials and Positive Affect), coefficients between IT-HOME scores and the three positive factors from the Matas et al (1978)coding scheme were alike. Third, there was significant variation in patterns of relations between HOME subscales and ASBI factors. For example, Responsivity was correlated .26 with child Expressiveness but only -.14 with Disruptiveness. By contrast, Acceptance correlated only .16 with Expressiveness but -.21 with Disruptiveness. The Learning Materials and Variety factors showed the strongest relationships with ASBI scores. Fourth, the observed child behaviors showed about the same strength of association with IT-HOME as did maternal ratings of child social competence. Of the observed child scores, Mutuality showed the strongest overall relations with IT-HOME.

As expected correlations between EC-HOME scores and child social competence measures were a little higher than those for IT-HOME scores (as high .46). However, increases in *r*-values were not uniform across HOME factors. There was little difference in *r*-values relating Responsivity and social competence as a function of the time when the home environment was measured. Neither was there much difference in *r*-values between HOME and ASBI scores as a function of time of home measurement. The exceptions were Variety and the HOME Total(in these two cases, 3-year HOME scores showed somewhat stronger associations). Correlations between EC-HOME and both CBCL and RG-BC tended to be higher than corresponding correlations with IT-HOME and maladaptive behavior. However, the tendency was not consistent across behavior problem factors. Correlations between 3-year Acceptance and Externalizing Problems were higher than those for 1-year Acceptance. However, correlations between Acceptance and Internalizing Problems showed little change as a function of time of home assessment. For Learning Materials, all correlations were higher for the 3-year home assessment but especially those for Internalizing Problems.

Partial Correlations

Partial correlations were calculated between HOME scores and social competence measures for corresponding HOME factors on the two versions of HOME (Learning Materials, Responsivity, Acceptance, Variety). The coeffients, shown in Tables 3 and 4, reveal in complex pattern of relationships. For example, the residual correlation between 1-year Learning Materials and child social competence was negligible when 3-year Learning Materials was controlled. By comparison, the residual correlation for 1-year Variety was significant (the average difference between partial and simple *r*s was about .10). Further, the partials for Responsivity and Acceptance were not significantly less than the corresponding simple correlations (usually about .05 less in magnitude). The same approximate reduction from simple to partial *r* was noted when partials for 3-year Responsivity and 3-year Acceptance were calculated. There was also little difference between partial and simple *r*s for 3-year Learning Materials. The reduction for 3-year

Variety was a little larger (averaging about .08); but all partials were still significant. The major exception to the general rule were relations between 3-year Learning Materials and both Persistence and Mutuality which were significantly reduced when 1-year Learning Materials was controlled. A similar reduction occurred in the case of 3-year Variety when 1-year Variety was controlled

In sum, there was little evidence for the predominance of either primacy or recency effects on 3-year social competence for the more personal support components of the home environment (i.e., Acceptance and Responsivity). There were some evidence for recency effects among aspects of the home environment dealing with stimulation (especially Learning Materials). The partial correlations for 1-year Learning Materials controlling for 3-year Learning Materials were essentially zero. Part of the difference in findings for the four HOME factors may lie in their differential stability from one to three years. Responsivity and Acceptance showed limited stability (< .3). By contrast, Variety and Learning Materials had greater stability (.45 and .52 respectively). The generally low stability of emotionally supportive aspects of the home environment was also reported by Pianta, Sroufe and Egeland (1989).

Multiple Correlations

The same four pairs of HOME subscales used for partial correlations were also used to compute multiple correlations. The multiple *R* using 1-year and 3-year Learning Materials to predict child social competence was not much higher than the simple *r* for 3-year Learning Materials. The same situation obtained for Variety. The difference was a little greater for Acceptance (most of the differences were .05 to .06) and greatest for Responsivity (as high as .11). Multiple correlations for HOME factors were as high as .42 with most ranging from .3 to .4.

Multiple Regression

Table 1 displays the results of multiple regression analyses in which each social competence measure was regressed on all six IT-HOME subscale scores. Backwards elimination was used to identify the paraticular subscales contributing to the prediction of social competence. With two exceptions, Positive Affect and Negative Affect, the Multiple *R*s were > .2. However the Multiple *R*s were only slightly higher than the simple correlations between IT-HOME Total score and each social competence outcome. The same four IT-HOME subscales tended to contribute significantly to the regression equation (Responsivity, Acceptance, Variety, and either Involvement or Learning Materials) of most social competence variables.

The same data analysis procedure was followed substituting the eight EC-HOME subscales for the six IT-HOME subscales (See Table 2). The results mirrored those for the regression analyses run on IT-HOME subscales. The Multiple *R* tended to be a little higher than the simple *r* for EC-HOME Total score. The four EC-HOME subscales generally contributing to regression equations for social competence variables were Learning Materials, Physical Environment, Variety, and Acceptance. However, neither Responsivity nor Acceptance tended to contribute to the regression equations for the behavioral observation measures.

Interactions between HOME subscales

Interactions between HOME subscales in their effects on social competence were examined for two sets of HOME factors at each of the age points assessed. Specifically, the following interactions were examined; 1) 1-year Learning Materials and Involvement, 2) 1-

year Responsivity and Acceptance, 3) 3-year Learning Materials and Language Stimulation, and 4) 3-year Responsivity and Acceptance. Results from the correlational analyses, together with theory, guided the choice of interactions to examine (See Parks & Bradley, 1991). Analyses of interactions were generally not done where both HOME subscales had correlations with social competence measures < .25. This procedure was followed in order to reduce the likelihood of observing chance findings.

For each criterion social competence measure selected, a regression model was tested that included the two selected HOME subscales and their interaction. Results indicated only one statistically significant interaction, the interaction of 1-year Responsivity and 1-year Acceptance on Disruptive behavior. However, two related comments about the testing of interaction effects are warranted. First, when the interaction term was entered as the second step in the regression procedure, many of the previously significant "main effects" were no longer significant in the model. Second, with the exception of 1-year Learning Materials and 1-year Involvement, correlations between main effects and their interactions were high (.66 to .98). This was true even for 3-year Acceptance and 3-year Responsivity which were only correlated .19 with each other. Each was correlated .7 with the Acceptance X Responsivity interaction.

Discussion

As expected, the home environments of LBW children were related to their social competence. Significant relations were obtained for parental ratings of children's social problems and children's adaptive behavior as well as for the direct observations of children's social behavior in problem-solving situations. There was a tendency for contemporaneous correlations between 3-year EC-HOME scores and 3-year social competence measures to be higher than lagged correlations between 1-year IT-HOME scores and 3-year social competence. This tendency was by no means universal across all environmental measures or across all social competence variables. The most notable exception to the general pattern was parental Responsivity. Correlations between 1-year Responsivity and later social competence were essentially the same as correlations between 3-year Responsivity and contemporaneous social competence.

A particularly interesting contrast in findings across the two home measurement points can be seen for the HOME factor parental Acceptance of the child. There is no difference in correlations between Acceptance and ASBI adaptive behavior factors as a function of the time of home assessment. Distinct from this is the situation relative to the Achenbach CBCL behavior problems scores. The correlation between 3-year Acceptance and externalizing problems is higher than the correlation between 1-year Acceptance and externalizing problems; but there was no difference in correlations for internalizing problems. Relatedly, while there was strong evidence to support the contemporaneous influence of Learning Materials on social competence, the greatest difference was for internalizing problems. As stated earlier, one possible contributor to the diversity of findings is differential stability of home factors. Learning Materials and Variety were more stable from one to three years. Correspondingly, the correlations with social competence were of greater magnitude for the 3-year home assessment point. By contrast, neither Responsivity nor Acceptance was very stable, perhaps contributing to lower correlations. However, if stability was the only factor operative in increasing correlations, one would expect about equal *r*-values for the two age points for stable home factors, just greater *r*-values than for less stable home factors.

Results from the partial correlations suggest that while stability of the environment may be a factor in increasing correlations, the more recent level of events in relatively stable phenomena may carry greater weight in determining the magnitude of associations -- actually there was only moderate stability for Learning Materials and Variety. The shrinkage was far greater for 1-year Learning Materials when 3-year Learning Materials was controlled than was the shrinkage for 3-year Learning Materials when 1-year Learning Materials was controlled. For less stable home environment factors (Responsivity, Acceptance) there was minimal shrinkage regardless of which was controlled.

Results from the multiple correlations suggest that the observed correlations between measures of stimulation within the home environment (Learning Materials, Variety) result at least partially because such stimulation tends to continue in the home. Multiple *R*-values for social competence measures resulting from the combination of 1-year and 3-year scores on Learning Materials tended to be only slightly higher than the simple bivariate correlation recorded for 3-year Learning Materials (the same basic pattern also emerged for Variety). Distinct from this is the situation with socio-emotional support within the home environment (Responsivity, Acceptance). While measurements of socio-emotional support in the home environment taken at each time point showed somewhat weaker correlations with social competence measures than the more stable stimulation factors, the multiple correlations indicate that there may be some "additive" influence of these support variables over time. Socio-emotional experience at each point in time, while not highly connected to experiences at other points in time, "cumulates" in its influence on social competence. More specifically the multiple correlations tended to be higher than the bivariate correlations for 3-year home assessments in the case of Responsivity and Acceptance. In this regard it is important to note that the results may also reflect the population under study (i.e., low birthweight, premature infants). Changes in capabilities, demands, and reponsiveness of these babies across the first three years of life may contribute to the low stability in parental supportive behavior.

Results from the examination of interactions among home environment factors offers another view of the mechanisms linking environmental inputs to social behavior in infants. In one instance, a true interaction effect was observed: namely, between 1-year Responsivity and 1-year Acceptance on child Disruptiveness. In a considerable number of other cases, home environment variables that showed a significant "main effect" when entered in the first step of the regression procedure had not-significant associations with social competence once the interaction term was included in the second step. In 3 of the 4 pairs of home environment variables examined for possible interaction effects, there were high correlations between each member of the pair and the interaction term for the pair(> .6). These results suggest that while relationships between home environment and social competence during infancy may not be strong (only twice did they account for more than 20% of the variance), the relationships may not be simple. That is, specific home environment factors in particular combinations may account for more of the variance in child social competence rather than social competence reflecting more general, global aspects of the environment. For example, 1-year Learning Materials and 1-year Involvement each shares about 4% of the variance with child depression. Together they account for 7%.

The analyses of interactions and the regression analyses which included all HOME subscales at each age level suggest not only a complex relationship at each age but a changing relationship across infancy. This can be seen in the differential relationships with Internalizing Problems and Externalizing Problems. Internalizing Problems are related to such home stimulation factors as 1-Year Learning Materials and 1-year Involvement, which together account for about 5% of the variance. However, the contribution of object and person stimulation at age three accounts for nearly 13% of the

variance. By contrast, person stimulation (operationalized in such susbscales as 1-year Involvement and 3-year Language Stimulation) seem to have little association with Externalizing Problems Even person support factors such as Responsivity and Modeling seem to have little bearing on Externalizing Problems. Parental use of negative control (Acceptance) at both 1 and 3 appears related to both Internalzing and Externalizing Problems. There was a significant increase in its relationship to Externalizing Problems by age three. The overall Variety of stimulation available and the quality of the Physical Environment also seem about equally related to Internalizing and Externalizing Problems.

The quality and quantity of stimulation available to a child in the home environment seems particularly significant for adapative social behavior. These environmental factors measured at age one account for about 15% of the variance in Expressiveness, almost 25% by age three. A notable difference at the two age points in the contribution of Responsiveness. It contributes to the prediction of Expressiveness at age one but not at age three. A quite similar pattern emerged with respect to observed Mutuality. The overall quality of stimulation contributes to Mutuality at both one and three; but Responsivity contributes only at age one. These findings seem to make theoretical sense. Adaptive social functioning seems to require both a responsive and a stimulating early environment (i.e., the first year or so of life). Once a basic trust in the environment is laid down, a child's likelihood of expressing himself in socially effective ways is more dependent on having a variety of objects and persons to engage.

To a lesser degree observed Persistence and Enthusiasm also seem related to the general quantity and qualtity of stimulation available in the environment, particularly the object environmen This latter relation has been suggested by Wachs (1990). It is important to note in this regard that correlations with these two observed behaviors were small.

Finally, a word needs to be said about Compliance. Somewhat surprisingly, the relationship between IT-HOME scores and Compliance was marginal. While several IT-HOME susbscales at age one had low but significant correlations with Compliance, none had a relationship independent of the rest. At age three the story was a bit different. Four EC-HOME subscales made significant contributions to the prediction of Compliance (Language Stimulation, Modeling, Variety, Acceptance). The large majority of items in each involve encounters with persons.

Most of the variance in children's social competence (as measured by the Achenbach CBCL, the Richman-Gragham Behavior Checklist, the ASBI, and the coded observations) is not accounted for by the types of stimulation and support assessed with the HOME at ages one and three. The patterns that were observed appear complex and dynamic across the first three years of life. They also appear in keeping with theoretical expectations. While some of the findings are suggestive of causal influences in both directions, the analyses do not technically allow for such interpretations. Moreover, it is not known whether the patterns observed for the total IHDP Follow-up group will apply across the constituent ethnic, gender, and social class subgroups. On the other hand, the results offer some engaging hypotheses regarding the potential effect of the intervention. For example, so long as a child has a reasonably responsive environment in the first year of life, it may be that adaptive social expressiveness and mutuality of interation can emerge even though the child lives in an understimulating home so long as the day care environment is rich in person and object opportunities.

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Table 1

Correlations between Infant-Toddler HOME and Children's Social Behavior at Three Years

Social Competence Variables	IT-HOME Subscales							
	Responsivity	Acceptance	Organization	Materia	Involvement	Variety	Total	Mult-R
ASBI								
Expressiveness	.25*	.16	.20	.33*	.23	.30*	.37	.39
Compliance	.15	.20	.11	.22	.20	.27	.29	.31
Disruptiveness	-.14	-.21*	-.13	-.23*	-.16	-.21*	-.27	-.32
ACHENBACH								
Total Problems	-.17*	-.23*	-.11	-.18	-.19*	-.22*	-.28	-.31
Externalizing	-.14	-.23*	-.11	-.18	-.19*	-.23*	-.27	-.31
Internalizing	-.20*	-.22*	-.14	-.19	-.20	-.24*	-.30	-.32
Social Withdrawal	-.19*	-.19*	-.15	-.17	-.19	-.24*	-.28	-.30
Depression	-.19*	-.24*	-.13	-.22	-.22*	-.24*	-.32	-.34
Aggression	-.12	-.22*	-.11	-.16	-.17	-.22*	-.25	-.27
Destruction	-.21*	-.23*	-.13	-.25*	-.23	-.26*	-.34	-.36
RICHMAN-GRAHAM	-.21*	-.13	-.18	-.23	-.23*	-.21*	-.30	-.30
MOTHER-CHILD INTERACTION								
Persistence	.12	.07	.04	.22*	.19	.14	.18	.22
Enthusiasm	.13	.06	.02	.20*	.17	.13	.17	.20
Positive Affect	.12	.08	.05	.08	.13	.13*	.15	.13
Negative Affect	-.10*	-.01	-.01	-.17	-.09	-.09	-.11	-.10
Mutuality	.20*	.17*	.07	.29*	.23	.20	.30	.32

* Variables that make significant contributions to the regression model.

Table 2

Correlations between Early Childhood HOME and Children's Social Behavior at Three Years

Social Competence Variables	EC-HOME Subscales									
	Learning Materials	Language Stimulation	Physical Environment	Responsivity	Learning Stimulation	Modeling	Variety	Acceptance	Total	Mult-R
ASBI										
Expressiveness	.39*	.38*	.28*	.27	.34*	.28	.38*	.15	.46	.47
Compliance	.31	.25*	.19	.14	.22	.26*	.32	.21*	.35	.38
Disruptiveness	-.27*	-.15	-.29*	-.15	-.09	-.25*	-.32	-.23*	-.31	-.37
ACHENBACH										
Total Problems	-.28*	-.22	-.27*	-.17	-.15	-.19	-.30*	-.27*	-.34	-.39
Externalizing	-.29	-.22	-.26*	-.17	-.15	-.22	-.29*	-.31*	-.35	-.40
Internalizing	-.34*	-.30*	-.29*	-.22	-.20	-.23	-.33*	-.23*	-.40	-.41
Social Withdrawal	-.30	-.30*	-.26*	-.18	-.19	-.20	-.30*	-.21*	-.36	-.38
Depression	-.37*	-.29	-.29*	-.24	-.19	-.24	-.34*	-.22*	-.41	-.42
Aggression	-.26	-.19	-.25*	-.16	-.13	-.20	-.27*	-.30*	-.32	-.38
Destruction	-.38*	-.20	-.31*	-.21	-.18	-.26	-.35*	-.3*	-.42	-.46
RICHMAN-GRAHAM	-.29*	-.20	-.26*	-.10	-.14	-.19	-.27*	-.20*	-.31	-.34
MOTHER-CHILD INTERACTION										
Persistence	.27*	.17	.10	.13	.11	.15	.25	.09	.23	.27
Enthusiasm	.22*	.15	.11	.13	.05*	.11	.20*	.06	.19	.24
Positive Affect	.09	.09	.09	.08	.04	.05	.16*	-.03	.11	.16
Negative Affect	-.14	-.10	.02*	-.12	-.08	-.08	-.16*	-.03	-.12	-.19
Mutuality	.35*	.21	.18	.20	.17	.20	.32*	.11	.33	.36

* Variables that make significant contributions to the regression model.

Table 3

Partial Correlations Between Infant-Toddler HOME and Children's Social Behavior at Three Years Controlling for Early Childhood HOME Scores

Controlling for	12-Month IT-HOME Subscales: Play Materials	Acceptance	Responsivity	Variety
	36-Month Learning Materials	36-Month Acceptance	36-Month Responsivity	36-Month Variety
Social Competence Measures				
ASBI				
Expressiveness	.33	.16	.25	.30
Compliance	.22	.20	.15	.27
Disruptiveness	-.23	-.21	-.14	-.21
ACHENBACH				
Total Problems	-.18	-.23	-.17	-.22
Externalizing	-.18	-.23	-.14	-.23
Internalizing	-.19	-.22	-.20	-.24
Social Withdrawal	-.17	-.19	-.19	-.24
Depression	-.22	-.24	-.19	-.24
Aggression	-.16	-.22	-.12	-.22
Destruction	-.25	-.23	-.21	-.26
RICHMAN-GRAHAM	-.23	-.13	-.21	-.21
MOTHER CHILD INTERACTION				
Persistence	.07	.05	.08	.03
Enthusiasm	.10	.05	.09	.04
Positive Affect	.03	.09	.10	.06
Negative Affect	-.11	-.01	-.07	-.02
Mutuality	.11	.15	.16	.06

Table 4

Partial Correlations Between Early Childhood HOME and Children's Social Behavior at Three Years Controlling for Infant-Toddler HOME Scores

	36-Month IT-HOME Subscales			
	Learning Materials	Acceptance	Responsivity	Variety
Controlling for	12-Month Play Materials	12-Month Acceptance	12-Month Responsivity	12-Month Variety
Social Competence Measures				
ASBI				
Expressiveness	.27	.12	.21	.27
Compliance	.25	.18	.13	.24
Disruptiveness	-.16	-.19	-.12	-.15
ACHENBACH				
Total Problems	-.23	-.24	-.14	-.23
Externalizing	-.23	-.27	-.15	-.22
Internalizing	-.29	-.18	-.17	-.25
Social Withdrawal	-.26	-.16	-.13	-.22
Depression	-.30	-.17	-.20	-.26
Aggression	-.20	-.26	-.14	-.20
Destruction	-.30	-.27	-.17	-.28
RICHMAN-GRAHAM	-.20	-.19	-.03	-.19
MOTHER CHILD INTERACTION				
Persistence	.19	.08	.11	.21
Enthusiasm	.23	.05	.10	.16
Positive Affect	.06	-.05	.05	.11
Negative Affect	-.05	-.02	-.09	-.14
Mutuality	.23	.07	.15	.26

Table 5

Multiple Correlations Using Infant-Toddler HOME and Early Childhood HOME to Predict Children Social Behavior at Age Three

Social Competence Measures	12 &36-Month Learning Materials	12 & 36-Month Acceptance	12 & 36-Month Responsivity	12 & 36-Month Variety
ASBI				
Expressiveness	.42	.20	.33	.40
Compliance	.31	.26	.20	.35
Disruptiveness	-.31	-.27	-.20	-.28
ACHENBACH				
Total Problems	-.29	-.32	-.23	-.33
Externalizing	-.30	-.34	-.23	-.32
Internalizing	-.34	-.27	-.27	-.35
Social Withdrawal	-.31	-.25	-.23	-.33
Depression	-.37	-.28	-.29	-.36
Aggression	-.27	-.34	-.19	-.29
Destruction	-.39	-.34	-.29	-.38
RICHMAN-GRAHAM	-.30	-.23	-.21	-.30
MOTHER-CHILD INTERACTION				
Persistence	.28	.10	.16	.25
Enthusiasm	.24	.08	.16	.20
Positive Affect	.09	.10	.13	.17
Negative Affect	.18	.03	.13	.16
Mutuality	.36	.18	.25	.33