

R E P O R T R E S U M E S

ED 011 962

24

AA 000 081

A STUDY OF OLDER SIBLINGS OF CHILDREN IN A PRESCHOOL INTERVENTION PROJECT. FINAL REPORT.

BY- MILLER, JAMES O. AND OTHERS

GEORGE PEABODY COLL. FOR TEACHERS, NASHVILLE, TENN

REPORT NUMBER BR-6-1421-DARCEE-VOL-1-NO-2 PUB DATE OCT 66

CONTRACT OEC-6-10-193

EDRS PRICE MF-\$0.18 HC-\$2.80 70P.

DESCRIPTORS- *SIBLINGS, *PRESCHOOL CHILDREN, *PRESCHOOL PROGRAMS, ACADEMIC ACHIEVEMENT, PERSONAL ADJUSTMENT, SOCIAL ADJUSTMENT, *FAMILY RELATIONSHIP, FAMILY ATTITUDES, TEACHER ATTITUDES, MEASUREMENT INSTRUMENTS, DEMONSTRATION PROJECTS, EARLY EXPERIENCE, COMPARATIVE ANALYSIS, *CHILD DEVELOPMENT, NASHVILLE

THE EFFECTS OF A PRESCHOOL INTERVENTION PROJECT ON OLDER BROTHERS AND SISTERS OF THE EXPERIMENTAL SUBJECTS WERE INVESTIGATED. DURING THE INTERVENTION RESEARCH, CONCERN HAD BEEN EXPRESSED FOR POTENTIAL DETRIMENTAL EFFECTS ACCRUING TO THE OLDER SIBLINGS THROUGH INVIDIOUS COMPARISONS WHICH MIGHT BE MADE BY SCHOOL PERSONNEL AND PARENTS. OLDER SIBLINGS IN THE ADJACENT BIRTH ORDER, REMOVED NO FURTHER THAN 2 YEARS FROM THE EXPERIMENTAL CHILDREN, WERE SELECTED FOR STUDY. A NUMBER OF INSTRUMENTS WERE USED TO OBTAIN DATA RELATED TO BOTH THE EXPERIMENTAL CHILDREN AND THE OLDER SIBLINGS ON VARIABLES OF SCHOOL ACHIEVEMENT, PERSONAL ADEQUACY, CLASSROOM ADJUSTMENTS, AND FAMILY RELATIONS. IN THE ANALYSIS OF THE DATA GAINED, LITTLE EVIDENCE WAS FOUND TO SUPPORT THE ORIGINAL CONTENTION THAT OLDER SIBLINGS OF CHILDREN INCLUDED IN AN EXPERIMENTAL PRESCHOOL PROGRAM SUFFER ADVERSELY IN ACADEMIC ACHIEVEMENT, PERSONAL DEVELOPMENT, OR SOCIAL DEVELOPMENT BY SUPPOSED OR ACTUAL INVIDIOUS COMPARISONS. (JH)

DEMONSTRATION AND RESEARCH CENTER FOR EARLY EDUCATION

A UNIT OF THE

John F. Kennedy Center for Research on Education and Human Development

GEORGE PEABODY COLLEGE FOR TEACHERS / NASHVILLE, TENNESSEE 37203

A Study of Older Siblings of Children in a Preschool Intervention Project

James O. Miller
Bettye Jeanne Forrester
Barbara Gilmer
Janet Cupp

Contract No. OE-6-10-193

(6-1421)

October 1966

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Additional support for these investigations was obtained under Grant 5-R11-MH00765 from the National Institute of Mental Health and Grant 66-9174 from the Office of Economic Opportunity.

DARCEE Papers and Reports
Vol. 1 No. 2 1966



FINAL REPORT

A Study of Older Siblings of Children in a Preschool Intervention Project¹

Contract No. OE-6-10-193

**James O. Miller
Bettye Jeanne Forrester
Barbara Gilmer
Janet Cupp**

October 1966

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Demonstration and Research Center for Early Education

George Peabody College for Teachers

Nashville, Tennessee

¹ETP was supported by Grant 5-R11-MH00765 from the National Institute of Mental Health. Additional support for this investigation was obtained under Grant 66-9174 from the Office of Economic Opportunity.

Purpose

This study was designed to investigate the effects of a preschool intervention project on the older brothers and sisters of the experimental subjects. Unlike their preschool brothers and sisters, the older siblings started school without the benefits of enrichment experiences and direct contact with an experimental program. Several lines of reasoning suggested the possibility of positive as well as detrimental effects which would accrue to the older siblings of the children undergoing an intervention program.

In this instance the experimental intervention program was the Early Training Project located in a small city in the upper South. The subjects were born in 1958 and entered the first grade in September 1964. One treatment group (T₁) had three special summer school experiences of ten weeks each and weekly contacts over the remainder of the year with a home visitor teacher. The job of the home visitor was to attempt to carry over the effect of the summer school experience through the remainder of the year by working directly with the mother of the treatment children. The second treatment group (T₂) had two summer experiences and one winter of home visitor contacts prior to enrollment in the first grade. A third group of children of the same city were used as a comparison group (T₃). The fourth group of children (T₄) was a distal comparison group that lived in a city roughly comparable to the experimental community but located sixty miles away. The comparison groups received pre- and post-tests during the course of the project. Specially planned techniques were used with the target children in an attempt to offset progressive retardation in cognitive development and school achievement. The experiences were centered around the development of attitudes and aptitudes conducive to school achievement and attention was given to physical, social, and personal development of the children.

While engaged in the demonstration-research project, the ETP staff was mindful that intervention involves change and the resultant change may be accompanied by some degree of dis-equilibrium in the social system, particularly the micro-system of the family. Psychiatric consultation was used "to check on the possible ill effects of the planned intervention involved in the study" and to note "possible negative effects on the child's adjustment caused by participation in the project" (Klaus & Gray, 1962; Klaus & Gray, 1963). Psychiatric judgment concluded that the experimental children's emotional, social, and personal development was not adversely affected.

An investigation of the intelligence test performance of experimental younger siblings when compared with the younger siblings of the control groups indicated a vertical diffusion of treatment effect within experimental families. Younger siblings who had been in a family that received home visitor contacts had IQ scores comparable to the initial scores of their experimental brothers or sisters, while the control younger siblings' scores were, on the average, thirteen points lower than their siblings' initial intelligence test score.

During personal contacts some educators and psychologists had expressed concern over potential or actual detrimental effects for the older siblings. The contention

was that older siblings might suffer from invidious comparisons made with their younger preschool siblings actively involved in an experimental preschool program. With this in mind, a survey was made of program proposals and preschool evaluations to pinpoint any existing evidence or the basis for such concerns.

Two distinct sets of criteria were used for the selection of subjects in the literature reviewed. (1) Inter-family history (incidence of poor academic performance among older children), and (2) Extra-family conditions (economic, residential, geographic criteria). It was noted that the decline in intellectual development, the progressive educational retardation, and the school difficulties experienced by older children in a school system gave impetus to the development of preschool intervention projects (Centennial Joint School District, 1963; Milwaukee Public Schools, 1964; Sheldon, 1964; Wood, 1965). Some of the programs selected target children on the basis of the poor performance by an older child in the family (Bereiter, 1965; Champaign Youth Council, 1965; Moline, Illinois, 1964; Brain, 1964; Oakland Public Schools, 1964); the limited school achievement of an older sibling was among the criteria in other programs (Brain, 1964; Oakland Public Schools, 1964). On the other hand socio-cultural definitions of cultural deprivation were used in selecting preschool children in some communities (Buffalo Public Schools, 1964; Centennial Joint School District, 1963; Hess, 1964; St. Louis Public Schools, 1964; Sheldon, 1964; Stine, 1964; Wood, 1965). Selecting preschool children with reference to poor performance of older siblings might tend to build in the probability that comparisons would be made. In fact, it was found that in evaluating some of the programs, school administrators and teachers referred to significant differences in the behavior, attitudes, and aptitudes of preschool children as opposed to their older siblings (Brain, 1964; Moline, Illinois, 1964; Wood, 1965). Although the criteria for selecting ETP Ss had been socio-cultural, without direct reference to the performance of older siblings, the mere fact of intervention could lead to invidious comparisons.

The demonstration efforts of Lewis (1961) and Jeffers (1964) have suggested "a cut-off point in parental optimism," with lower class parents feeling less able to control and socialize children once they are of school age. If this were so, the ETP older siblings could be adversely affected concerning feelings of self adequacy. This could have resulted if the older sibling: felt relatively neglected during intervention efforts with his preschool sibling; if he experienced more intense sibling rivalry; and felt inferior to his younger sibling. During the conduct of Mother Interviews in 1964, some of the mothers' recorded remarks, and comments that they made before and after the standardized schedule, suggested that comparisons were being made which might effect the older sibling's feeling of adequacy. (See Appendix C.)

However, the inter-family relations of lower class families have been characterized as cooperative, featuring mutual aid with less jealousy and sibling rivalry (Reissman, 1963). The latter was early established by Sewall (1930) as a function of increasing family size. In addition, responsibility for child care often resides in the older siblings as Stone and Church (1957) have pointed out. It seemed highly unlikely that a few comparisons, even though they might be unfavorable, would have a profound effect

upon family relations where the ever present need for cooperation was so important for survival.

By the summer of 1965 a study of older siblings was deemed necessary to be addressed to two important questions: (1) Is the vertical diffusion effect bilateral, i.e., where there is an older sibling in the family does the effect generalize to him? (2) Is the effect positive or negative in its influence on older siblings?

Specifically the hypotheses for the study of older siblings were as follows: (1) School achievement for the siblings of experimental subjects would be equal to or superior to the comparison group older siblings, but not significantly less than their respective younger siblings, (2) The personal adequacy of the experimental older siblings would be equal to or greater than that of the comparison older siblings and not significantly less than their respective younger siblings as measured by self report scales, (3) Teacher's ratings of class adjustment for the older siblings of the experimental groups would be equal to or greater than similar teacher rating by the teachers of the comparison group older siblings, but not significantly inferior to the ratings of their respective younger siblings, and (4) No significant differences would be found between experimental and comparison sibling groups on measures of family relations.

Method

Subjects

The subjects for this study included Early Training Project siblings born in 1956 and 1957, those children one to two years older than the children in the Early Training Project sample. Since the ETP target children had been randomly assigned to treatment groups initially, it was assumed the older siblings were a random sample of the disadvantaged population in the project towns. In all instances the child included in this study was the one in the adjacent older birth order. A total of 49 children were identified meeting this criteria. All 49 subjects were used in the analysis of the achievement test data. Table I in Appendix B illustrates the distribution of the subjects according to Early Training Project treatment group, sex and date of school entrance. From this population ten older siblings were randomly selected from each of the treatment groups for study of family relations. Only the older siblings of the treatment and proximal comparison group were included in the studies of personal adequacy and teacher ratings of classroom adjustment.

Instruments and Procedure

Academic achievement. In both school systems in which the subjects were in attendance, the Metropolitan Achievement Test battery was administered annually in April. Median grade equivalent scores for all years the older sibling subjects were in attendance were obtained from cumulative records. Because the older siblings had been in school varying lengths of time, a mean gain score was computed for each subject by

averaging the yearly gains in grade equivalent scores between consecutive tests. A simple one-way analysis of variance by treatment group identification was made to assess the impact of intervention on the variable of school achievement.

Stanford achievement data were available for the older siblings and the target children in Murfreesboro, the town in which the intervention project was conducted. These data provided the opportunity to compare the target children and the older siblings by treatment groups. Gain scores from the results of the 1965 and 1966 administrations of the Stanford Achievement Tests based upon the median grade placement score were submitted to a two-way analysis of variance.

Personal Adequacy. Two measures of personal adequacy were obtained from the experimental and older siblings, a self-concept measure and a measure of Locus of Evaluation and Locus of Control. Crowne and Stephens (1961) have described the self-concept as a generalized personality construct involving self-acceptance and self-evaluative behavior. From Jersild's (1952) children's statements of likes and dislikes about themselves, Piers and Harris (1964) developed an instrument for assessment of the child's self-concept. A shorter adaptation of this self-concept scale (Willard, 1965) was used in this study (see Appendix A). This 30 item forced choice scale taps feelings about academic status, anxiety, happiness and satisfaction, physical appearance and attributes, and popularity. A two-way analysis of variance, ETP treatment group x sibling groups was used with the total score obtained on the self-concept measure to assess the impact of the intervention project upon self-concepts.

A second paper and pencil self-report instrument was administered to assess locus of control and locus of evaluation. Locus of control has been defined as extent to which an individual sees himself in control of his environment or at the mercy of external environmental forces (Miller, 1963). This personality construct connotes the individual's perception of his mastery of powerlessness in the environment (Battle & Rotter, 1963). Miller has defined the construct locus of evaluation as the extent to which an individual judges his behavior by internalized standards or depends on external references. The Children's Locus of Evaluation-Control Scale (Appendix A) is a 48 item forced choice scale assessing both the evaluation and control constructs. The two scores obtained from this instrument were submitted to a mixed design analysis of variance where construct scores x sibling groups x treatment groups formed the dimensions of the analysis (Lindquist, 1956).

Classroom Adjustment. Teacher ratings of classroom adjustment were obtained on the Murfreesboro Ss. A forced distribution rating instrument where the teacher rates her entire class on a variable had been developed for ETP use (Miller, 1963b). This instrument required ratings on ten variables. Six variables were selected from this instrument which seemed most appropriate for this study and they were augmented by five additional items developed by Willard (1965). (See Appendix .) Thus, ratings were obtained on eleven variables: activity level, curiosity, worry over achievement, scholastic achievement, spontaneous contribution, persistence in task orientation, over-all psychological health, initiation of new activities, inquiry for more information,

freedom of self-expression, and general adjustment. The rating scale provided a score from one to six depending on the category to which the child was nominated by the teacher for each of the eleven variables. The data obtained on each variable were submitted to a treatment x sibling group two-way factorial analysis of variance.

Family Relations. A technique devised by Anthony and Bene (1957) designed to explore the emotional attitudes of children as they relate to his family was modified for this study (Appendix A). Items printed on cards are read to the child and he places the item in one of four boxes; one which has been labeled with his name, one with his sibling's name, one which has both names, or a box which has no label standing for "neither." Ninety items were selected reflecting feelings that were outgoing positive, incoming positive, outgoing negative, incoming negative, and dependent. The 90 items were individually administered to all ETP treatment groups and their older siblings. A radian transformation of the raw score totals by categories was submitted to a mixed design analysis of variance where the dimensions of the design were treatment groups x sibling groups x scoring categories (Lindquist, 1956).

Results

Analysis of the Metropolitan Achievement Test average gain scores for the older sibling groups indicates a significant difference between the T₂* group over the other three older sibling groups. No significant differences were found between the other three treatment groups. (Appendix B, Tables 2 and 3.)

The comparison of achievement test scores on the Stanford Achievement battery in the town where the intervention project took place indicates that there were no significant differences in average gain by either the older sibling group or the intervention target children, nor were there within group significant differences. The comparisons in this analysis gave the opportunity to look at differential effects which might have accrued because of treatment intervention versus no treatment, but no significant differences in average gain scores were found which could be attributable to membership in a treatment versus comparison group. (Appendix B, Table 4.)

Personal Adequacy. Scores obtained on the self-concept scale, The Way I Feel About Myself, were analyzed in a two-way factorial analysis of variance. No significant differences were found between the sibling groups nor the treatment groups on this measure of personal adequacy. (Appendix B, Table 5.)

Figure 1, Appendix B, illustrates the design for the analysis of the second personal adequacy measure, Children's Locus of Evaluation and Control Scale. This Lindquist Type III mixed design provided the opportunity to make comparisons of constructs by sibling and treatment groups. As the summary table indicates (Appendix

* See sampling notes Table I, Appendix B.

B, Table 6), no significant differences were found between sibling groups or treatment groups on this scale. Nor was a significant relationship found between constructs.

Classroom Adjustment. A two-way factorial analysis of variance was run on each of the eleven variables rated by the teacher. No significant differences between sibling groups nor treatment groups were found for any of the variables with the exception of curiosity. Summary tables of these ten non-significant analyses are not included in the appendix, however, the one variable "Curiosity" which produced a significant treatment groups x sibling groups interaction and the analysis of simple effects is presented in Tables 7 and 8 in Appendix B. Critical differences comparisons of the means indicates that the significant interaction effect can be attributed to significant differences between the older sibling group and the experimental group in each treatment group. Curiosity ratings for the experimental children in T₁ and T₃ were significantly higher than their older siblings. The older sibling group, however, was significantly higher in curiosity ratings than the experimental group in the T₂ treatment group. The critical difference comparisons by siblings group over treatment groups indicates that there was a significantly greater curiosity rating for the T₃ group over the T₂ group all other comparisons were non-significant. In the older sibling group curiosity ratings for the T₂ group were significantly greater when compared with the T₁ and T₃ groups, but the differences between the T₁ and T₃ group were not significant.

Family Relations. Figure 2, Appendix B, illustrates the design analysis used which follows the Lindquist Type III mixed analysis of variance paradigm. Five separate Type III analyses were used to compare treatment groups x sibling groups x scoring categories on each of the five variables. The results of these analyses are presented in summary form in Tables 9 through 37 in Appendix B.

In the analysis of outgoing positive feelings, a significant difference was found at the .05 level in the treatment groups x scoring categories interaction, as well as a significant sibling group main effect.

The significant interaction can be accounted for by differences between scoring categories within each treatment group (Tables 10 through 17, Appendix B). All subjects attributed significantly more outgoing positive behaviors to the both choice than to any of the other three possible alternatives. The T₁ group was the only group who perceived themselves as involved in more outgoing positive behaviors than their siblings. The T₄ group was the only group which avoided the neither choice significantly. The significant sibling group main effect indicates that the Early Training Project subjects assigned significantly more outgoing positive feelings to themselves than did their older siblings.

A main effects difference for incoming positive feelings was obtained for scoring categories and for sibling groups (Table 19, Appendix B). All respondents elected the

both category significantly more often than the other three categories as recipient of incoming positive feelings. The Early Training Project subjects perceived themselves as receiving more incoming positive feelings than the older siblings did (Tables 20 and 21, Appendix B).

The analysis of the outgoing negative feelings yielded a scoring categories by treatment groups significant interaction (Table 22, Appendix B). Analysis of the simple effects indicates that the T₂ treatment groups attributed significantly more outgoing negative feelings to the both choice than did the distal comparison group (Table 24). All other comparisons across treatment groups were negative. Among the T₂, T₃, and T₄ groups significantly more outgoing negative behaviors were attributed to the neither choice than to the other categories. The T₁ group attributed more negative outgoing behaviors to their respective siblings than to the both category and denied outgoing negative behaviors on the part of self and both more frequently (Tables 27 through 30, Appendix B).

For the incoming negative feelings, a scoring category main effect was obtained which was attributed to the self and sibling getting fewer negative feelings incoming than the neither category (Tables 31 and 32, Appendix B).

A scoring category by treatment groups interaction was obtained on the analysis of dependency feelings (Table 33, Appendix B). The interaction effects were attributable to scoring category differences by treatment groups singly. No differences were found for the T₁ group. The T₂ group attributed dependency behaviors to both rather than self or sibling significantly as did the T₄ group. The T₃ group, however, attributed significantly more dependency relations to both when compared with self, but not when compared with sibling (Tables 34 through 37, Appendix B).

Discussion

School Achievement. Comparison of the older siblings of the Early Training Project target children on the Metropolitan Achievement Test fails to indicate a negative effect upon school achievement accruing to the older siblings by being either a brother or sister of one of the target children in the project. The significant difference that was obtained in which the second treatment group older siblings exhibited higher average gains than the other three groups is probably related to a similar finding among the T₂ target children on measures of intellectual functioning. Despite random assignment to groups, the T₂ target group children were somewhat superior intellectually to the other three groups. This would appear to be confirmatory evidence that these families are a sample from a somewhat superior population. When the children in the treatment groups were compared with their older siblings, no significant differences were found confirming the original hypothesis that the younger brother's or sister's involvement in an experimental program of even three year's duration would have no adverse effect upon the older sibling's academic performance.

Academic performance measures may well be removed enough from direct emotional effects that differences would not be obtained in such a relatively short time as three to four years. It might be expected then that if any adverse effect was to be found it would more likely present itself in personality measures of the individual children. Since the experimental target children had failed to show any adverse effects from the program itself and because of the strong descriptive positions that Reissman and others have taken concerning the internal strength of the family unit, it was hypothesized that no adverse effects would be found as measured by personality measures, however. This hypothesis was sustained on both the self-concept measure, The Way I Feel About Myself, and the Children's Locus of Evaluation and Control Scale.

The areas of feelings about academic status, anxiety, happiness and satisfaction, physical appearance and attributes, and popularity seem to cover a reasonable range to obtain a picture of the child's perception of himself. The self-concept scale would have been strengthened had it included a lie scale so that the honesty of the self-report could have been checked. It seems reasonable to conclude that if there was a covering on these items that it was a universal effect across all subjects, however.

No significant differences were found in the child's perception of powerlessness, nor did they appear to believe that their behavior was being judged in a differential fashion. As measured on the Children's Locus of Evaluation and Control Scale, the invidious comparisons that may have been made do not seem to have adversely effected the child's perception of himself, nor his perception of control or evaluation in his environment. There does not seem to be any basis in this study for concern over the effects of experimental intervention upon the older brothers and sisters of the target child as they relate to personal adequacy.

Classroom Adjustment. Of the eleven teacher ratings that were made, ten confirmed the hypothesis that there would be no significant differences between sibling groups, nor over treatment groups. It is difficult to explain the significant interaction that was obtained on the curiosity measure in terms of the objectives of the study. The significantly higher curiosity score obtained by the T₂ older siblings may be related to the significantly higher achievement scores obtained in the analysis of the Metropolitan Achievement Test. This does not account for the fact that their younger brothers and sisters showed less curiosity than the first treatment group, if intellectual functioning is related to curiosity. Our inability to explain this outcome certainly suggests the need for careful study of the effects of the intervention project on curiosity behavior. It is interesting to note that the teachers perceive the majority of these children on the less curious side of the variable.

Family Relations. In both categories relating to positive feelings, the experimental children perceive themselves as both giving and receiving more positive feelings than do their older siblings. Since the treatment groups included both experimental and comparison children, these effects cannot be attributed to the target children receiving a greater

incidence of positive reinforcement although it was built into the training programs. A more likely hypothesis is that older children are more specific in their dispensing of positive outgoing feelings. Such a developmental phenomenon suggests the need for further research with the instrument.

One of the most interesting findings was the group with the longest exposure to the experimental treatment and their siblings perceive themselves as involved in more positive outgoing behaviors than their siblings and attributed the more negative outgoing behaviors to their respective siblings while denying outgoing negative behaviors on the part of themselves and their respective siblings more frequently (T_1 target and older siblings). This is the only evidence in the study that there may have been a detrimental effect, an effect that was reciprocal and perhaps indicative of some rivalry.

A general denial of negative feelings by all groups was found. In the case of dependency behaviors, there is a wish to share the burden by mutual consent. The over-all results obtained with the Family Relations Test suggests it can be a useful research instrument. Further use of the technique to obtain normative and comparative data across classes is badly needed.

In general, this study finds little evidence to support the contention that older siblings of children included in experimental programs will suffer adversely in their school achievement, personal adequacy, classroom adjustment or family relations by supposed or actual invidious comparisons. The older siblings, as well as the target children in one of the treatment groups, did evidence a tendency to cast themselves in a better light at the expense of their respective brothers and sisters in the assessment of family relations but no evidence could be found that this had an effect upon the other variables of the study.

Summary

The purpose of this study was to investigate the effects of a preschool intervention project on the older brothers and sisters of the experimental subjects. Throughout the conduct of the intervention research, concern had been expressed for potential detrimental effects accruing to the older siblings through invidious comparisons which might be made by school personnel and parents. A search of the literature indicated that in many intervention projects the criteria for inclusion in a preschool program was lack of achievement on the part of an older sibling. This suggested that there could be a basis for invidious comparisons being made to the detriment of other children in the family. However, such criteria were not used in the selection of subjects for the Early Training Project. In addition, continuous psychiatric evaluation over the course of the project had found no adverse effects upon the target children. These facts, coupled with the authoritative descriptions of workers in the field of cultural deprivation pointing to characteristics of cooperation, mutual aid, and strength in the inter-family relations of lower class families, led to the hypotheses in this study that no adverse effects would be found in school achievement, personal adequacy, classroom adjustment, nor family relations for the older siblings of project children.

Method

Older siblings in the adjacent birth order removed no further than two years from the project children were selected for study. Achievement test data for both the experimental children and the older siblings were analyzed to assess the effect upon school achievement. Two measures of personal adequacy were administered to the experimental and older siblings, a self-concept measure and a measure of Locus of Evaluation and Locus of Control. These two measures were used to assess the child's perception of himself, powerlessness, and evaluative framework in the environmental context in which he lived. Teacher ratings of classroom adjustment were obtained on a forced distribution rating instrument in which the teacher rated the entire class. A method of assessing the family relations of the sibling and the target child was developed in which outgoing and incoming positive behaviors, outgoing and incoming negative behaviors and dependency were assessed.

In general, this study found little evidence to support the contention that older siblings of children included in an experimental program suffered adversely in their school achievement, personal adequacy, classroom adjustment, or family relations by supposed or actual invidious comparisons. The older siblings, as well as the target children, in one of the treatment groups did evidence a tendency to cast themselves in a better light at the expense of their respective brothers and sisters in the assessment of family relations, but no evidence could be found that this had an effect upon the other variables of the study.

References

- Anthony, J., & Bene, Eva. A technique for the objective assessment of the child's family relationships, J. ment. Sci., 1957, 103, 541-555.
- Battle, Esther S., & Rotter, J.B. Children's feelings of personal control as related to social class and ethnic group, J. Pers., 1963, 31, 489-490.
- Bereiter, C., Osborn, J., Engelmann, S., & Reiford, P.A. An academically-oriented preschool for culturally deprived children. (Received May, 1965) mimeographed.
- Brain, G.B. An early school admissions project. Progress Report, 1963-1964, Baltimore City Public Schools, September 1, 1964.
- Buffalo Pre-Kindergarten Project Progress Report, October, 1964.
- Centennial Joint School District, Johnsville, Penn. A long range attack on the drop out problem.
- Champaign, Illinois. Pre-kindergarten school program of the Champaign Youth Council. Summer, 1965 (mimeographed).
- Crowne, D.P., & Stephens, M.W. Self-acceptance and self-evaluative behavior: a critique of methodology. Psychol. Bull., 1961, 58, 104-121.
- Hess, R.D. School report, Perry Preschool Project, Ypsilanti, Michigan. Committee on Human Development. University of Chicago, 1964 (mimeographed).
- Jeffers, Camille. Three generations: case materials in low income urban living. Prepared as a participant in the Group Consultation on Parent and Family Life Programs with Low Income Families, Sub-Committee on Parent and Family Life of the Interdepartmental Committee on Children and Youth, Department of Health, Education, and Welfare, Washington, D.C. December 2-4, 1964.
- Jersild, A.T. In search of self. New York: Teachers College, Columbia University Press, 1952.
- Klaus, R.A., & Gray, Susan W. Early Training Project Interim Report, George Peabody College, November, 1962.
- Klaus, R.A., & Gray, Susan W. Early Training Project Interim Report, George Peabody College, November, 1963.
- Lewis, H. Child-rearing among low-income families, Washington Center for Metropolitan Studies. Washington, D. C., 1961.

Lindquist, E.F. Design and analysis of experiments in psychology and education. Boston: Houghton Mifflin Company, 1956.

Miller, J.O. Role perception and reinforcement conditions in learning among culturally deprived and non-deprived children. Unpublished doctoral dissertation, George Peabody College, 1963.

Miller, J.O. Teacher ratings of classroom adjustment. Unpublished research, George Peabody College, 1963b.

Milwaukee Public Schools. Compensatory education, program and services. September 1, 1964-65. Pamphlet.

Moline, Illinois. Experimental program to combat cultural deprivation in a selected group of preschool age children. Summer, 1964. (mimeographed)

Oakland Public Schools, Interagency Project, July, 1964.

Piers, Ellen V., & Harris, D.B. Age and other correlates of self-concept in children. J. educ. Psychol., 1964, 55, 91-95.

Reissman, F. The culturally deprived child: a new view, Educ. Dig., November 1963, 29, 12-15.

St. Louis Public Schools. Organization of an experimental preschool. National Council of Jewish Women. February, 1964.

Sewall, M.S. Two studies in sibling rivalry: 1. Some causes of jealousy in young children, Smith College Studies in Social Work, 1930, 1, 6-22.

Sheldon, T.D. Hempstead, N.Y. Public Schools, July 14, 1964 (mimeographed)

Stine, R.M. Preschool Environmental Enrichment Demonstration, 1964.

Stone, L.J., & Church, J. Childhood and adolescence. New York: Random House, 1957.

Willard, Mary E. Self and teacher ratings of child's self-concept. George Peabody College, October, 1965 (mimeographed).

Wood, Harriett G. Final report on the Berkeley Pilot Project in Compensatory Education under the provisions of Article 15 of Chapter 6, Division 6, of the Education Code (the McAteer Act) June 4, 1965 (mimeographed).

Appendix A

Instruments Used in the Study to Evaluate Personal Adequacy, Classroom Adjustment, and Family Relations

THE WAY I FEEL ABOUT MYSELF

Name _____

Date _____

School _____

Teacher _____

Here is a set of statements. Some of them are true of you and so you will circle the YES. Some are not true of you and so you will circle the NO.

There are no right or wrong answers.

Only you can tell us how you feel about yourself, so we hope you will mark the way you really feel inside.

- | | | | |
|-----|----|-----|---|
| YES | NO | 1. | I am a happy person. |
| YES | NO | 2. | It's hard for me to make friends. |
| YES | NO | 3. | I am smart. |
| YES | NO | 4. | I get nervous when the teacher calls on me. |
| YES | NO | 5. | My looks bother me. |
| YES | NO | 6. | I am strong. |
| YES | NO | 7. | I like being the way I am. |
| YES | NO | 8. | I am good in my school work. |
| YES | NO | 9. | I do many bad things. |
| YES | NO | 10. | I am nervous. |
| YES | NO | 11. | I often get into trouble. |
| YES | NO | 12. | I am disobedient at home. |
| YES | NO | 13. | I worry a lot. |
| YES | NO | 14. | I feel left out of things. |
| YES | NO | 15. | I have a pleasant face. |
| YES | NO | 16. | I am among the last to be chosen for games. |
| YES | NO | 17. | I am unhappy. |

- | | | | |
|-----|----|-----|------------------------------------|
| YES | NO | 18. | I have many friends. |
| YES | NO | 19. | I am cheerful. |
| YES | NO | 20. | I am dumb about most things. |
| YES | NO | 21. | I am good-looking. |
| YES | NO | 22. | People pick on me. |
| YES | NO | 23. | I wish I were different. |
| YES | NO | 24. | I am a leader in games and sports. |
| YES | NO | 25. | I forget what I learn. |
| YES | NO | 26. | I am a good reader. |
| YES | NO | 27. | I am often afraid. |
| YES | NO | 28. | I cry easily. |
| YES | NO | 29. | I think bad thoughts. |
| YES | NO | 30. | I can be trusted. |

CLOE-C SCALE

James O. Miller
George Peabody College for Teachers
Nashville, Tennessee

NAME _____

SCHOOL _____

DATE _____

TEACHER _____

DIRECTIONS -- THIS IS NOT A TEST. The questions on the following pages are to find out how children your age feel about certain things. There are no right or wrong answers. Some children will answer a question "Yes," while other children will answer the same question "No." Your answer will depend on how you feel about the question.

Remember -- there are no right or wrong answers.

Read each question carefully; then if you think the answer should be "Yes," or mostly "Yes" for you, mark your answer in the "YES" column. If you think the answer should be "No" or mostly "No" for you, mark your answer in the "NO" column.

You **MUST** answer each question.

CIRCLE ONE ANSWER FOR EACH QUESTION:

- | | | | |
|-----|----|-----|---|
| YES | NO | 1. | When someone gets mad at you, can you usually do something about it? |
| YES | NO | 2. | Is the best comparison for deciding if you're doing well the comparison you make with yourself? |
| YES | NO | 3. | Do you feel that success is a matter of hard work rather than luck? |
| YES | NO | 4. | Is it best to ask the other kids who does the best work in class? |
| YES | NO | 5. | Do you feel that you have really little choice in who are going to be your friends? |
| YES | NO | 6. | When it comes to your own success are you the one that is really the best judge? |
| YES | NO | 7. | When nice things happen to you, is it only good luck? |
| YES | NO | 8. | Would you be able to make good decisions when choosing kids to do things in class? |
| YES | NO | 9. | When friends get mad at you, there is little you can do about it. |
| YES | NO | 10. | Is it hard for you to tell if you've done a good job? |
| YES | NO | 11. | Does it seem like it is hard to get other kids to understand you? |
| YES | NO | 12. | If you were an umpire, would it be hard to decide what's right? |
| YES | NO | 13. | Can a child your age ever have his own way? |
| YES | NO | 14. | Is it important what others think about you and what you do? |
| YES | NO | 15. | Does it ever help any to think about what you will be when you grow up? |
| YES | NO | 16. | Are the other kids better judges than you are of the best players in a game? |
| YES | NO | 17. | When people are mean to you, could it be because you did something to make them mean? |
| YES | NO | 18. | Do you need to know what others think to know if you've done well? |
| YES | NO | 19. | If another child were going to hit you, could you do anything about it? |

- | | | | |
|-----|----|-----|--|
| YES | NO | 20. | Do you have trouble making up your mind about the best thing to do? |
| YES | NO | 21. | Can you ever try to be friends with another kid even if he doesn't want to? |
| YES | NO | 22. | Do you think staying out of trouble is easy if you just follow what others say to do? |
| YES | NO | 23. | When you get in an argument, is it sometimes your fault? |
| YES | NO | 24. | Is it easy to decide who's right when you're umpire or referee? |
| YES | NO | 25. | Is it hard to get other people to do the things you want them to? |
| YES | NO | 26. | When there's an argument about the right thing to do, do you usually give in because the other kids know best? |
| YES | NO | 27. | Can kids your age ever have anything to say about where they are going to live? |
| YES | NO | 28. | When you do something do you find it hard to tell if it's right or wrong? |
| YES | NO | 29. | Can you usually get the kids to like you? |
| YES | NO | 30. | Is it hard to tell if you've done poorly until you find out what others think? |
| YES | NO | 31. | Even if you ask them, is it hard to get people to do things for you? |
| YES | NO | 32. | Can you usually tell if you've done poorly without finding out what others think? |
| YES | NO | 33. | Do you believe a kid has a choice about what he's going to be when he grows up? |
| YES | NO | 34. | Do you find it's hard to get along without worrying about what others think? |
| YES | NO | 35. | Do you feel that no matter what happens tomorrow there's something you can do about it? |
| YES | NO | 36. | Do you do what everyone else is doing because that's the best way to do what's right? |
| YES | NO | 37. | Kids your age can change things that are happening in the world. |
| YES | NO | 38. | Do you usually make up your mind without asking someone first? |

- | | | | |
|-----|----|-----|---|
| YES | NO | 39. | Can you usually get the kids to play the game that you want them to? |
| YES | NO | 40. | Would you rather have the other kids help you decide what's best for you? |
| YES | NO | 41. | Do you feel that you sometimes have a chance to make up your own mind? |
| YES | NO | 42. | Others may not know, but do you feel you usually know the right thing to do? |
| YES | NO | 43. | Do others usually make you do what they want to do? |
| YES | NO | 44. | Do you feel talking about what's right only makes it hard to decide? |
| YES | NO | 45. | Can you usually make the others stop if they're doing something you don't like? |
| YES | NO | 46. | Do you feel you would rather depend on the others to decide what's best? |
| YES | NO | 47. | Can you get the others to use your ideas? |
| YES | NO | 48. | Can you usually depend on yourself to make the best decisions without help from others? |

CURIOSITY. This variable refers to the child's desire to know more about things around him. He wants to know just for the fun of knowing. This child probably will do well in his school activities although he would be curious even if it didn't help him to do well. He wants to know about things just because he's curious, not because it will help him to do well in school. The child high on this variable asks lots of questions or tries in other ways to learn more about things (not questions just as an attention getting device). His questions reveal that he is imagining other relationships than those under consideration, wondering what would happen if such and such were true; he may want more information, greater detail about the topic under discussion. When he comes upon a new and unfamiliar object he will explore all the possibilities the object presents for manipulation and use. The child low on this variable never seems to seek knowledge for knowledge's sake. His environment for one reason or another just doesn't seem to challenge him to exploration. He doesn't seem to wonder about things, he seems to take things as they are without curiosity as to any new or different relationship potentially available.

Very little curiosity	Some, but not much curiosity	Somewhat less curiosity than average	Somewhat more curiosity than average	Considerable curiosity	Very much curiosity
(1)	(2, 3, or 4)	(6, 7, or 8)	(6, 7, or 8)	(2, 3, or 4)	(1)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

SCHOLASTIC MOTIVATION. This variable refers to the extent the child is motivated to do well in school activities. It is not the same as how well he is doing nor how much he is worried or concerned about his performance, but is simply how intensely motivated he is. The child high on this variable is eager for success in school activities, he tries hard to do his work accurately and well and is very pleased when his teachers compliment him. He may on his own initiative redo an assignment or start all over on an activity when the first attempt was incorrect. He may be outgoing in his eagerness for success wanting to know what comes next, what is going to be done the next day in terms of scholastic activities. He is proud of his work and eagerly anticipates sharing his successes with his parents by taking home his work. The child low on this variable is not particularly eager about or involved in his school activities, even though he may be doing good work.

Very little scholastic motivation	Some, but not much scholastic motivation	Some what less scholastic motivation than average	Some what more scholastic motivation than average	Considerable scholastic motivation	Very much scholastic motivation
(1)	(2, 3, or 4)	(6, 7, or 8)	(6, 7, or 8)	(2, 3, or 4)	(1)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

SPONTANEOUS CONTRIBUTION. This variable refers to the extent to which the child makes contributions to the class, without being asked by the teacher to make a contribution. The contribution may be instantaneous, in this case more likely by verbal means, or it may be made later, such as bringing something from home, but the idea, however, is elicited by the topic under discussion. The appropriateness of the contribution should receive some consideration, but the major emphasis should be on amount.

[illegible]

[illegible]

FAMILY RELATIONS TEST

Name: _____

Age: _____

Address: _____

Date: _____

School-Grade: _____

Teacher: _____

Examiner: _____

The Administration of the Test

Instructions to the Examiner:

The ninety test items are printed on small individual cards, which are read to the child, one at a time, by the examiner. The child is told that the cards contain statements and that he is to decide whether the statement best fits himself, his sibling, both children, or neither child. Four boxes with slits in the top are placed in front of the child for the test session. One box has the child's name and an appropriate line drawing of a child; a second box has an appropriate illustration and the name of the sibling; the third box has names and line drawings to represent both children; and the fourth is a plain box with a slit. The child's task is to place each test item card into one of the four boxes.

Instructions to the Child:

I have some cards with sentences written on them. (Showing the stack of cards to the child.) I shall read each card to you. Listen carefully. Then decide who I have said something about. I will give you the card. Put the card in the right one of these boxes. If what I say tells about you, put the card in this box (pointing). If what I say tells about your (brother, sister _____), put the card in this box (pointing). If what I say tells about both of you, put the card in this box (pointing). If what I say is not true of either one of you, put the card in this box (pointing).

Listen carefully. Let's try some of the cards. (Use buffer items for practice, to test child's understanding of the task. See that the child gives the correct response. Correct when necessary, with an explanation.)

"This child lives at (family's address)."

Both.

"This child's teacher is (name of sibling's teacher)."

Sibling.

"This child is _____ years old (age of child)."

Self.

"This child eats marbles."

Neither.

THE TEST ITEMS

The following test items are on cards which are read to each child by the examiner:

1. This child wants to come to school.
2. This child does well in school.
3. This child does well in reading.
4. This child does well in writing.
5. This child does well in numbers.
6. This child does well in art and drawing.
7. This child can sing well.
8. This child likes to play school with the other children.
9. This child plays well with other children.
10. This child did not like the teacher last year.
11. The teacher likes this child.
12. This child would like to spend more time with the teacher.
13. Sometimes this child does not want to come to school.
14. Mother wants this child to go to school.
15. Mother thinks this child does well in school.
16. Mother thinks this child does well in reading.
17. Mother thinks this child does well in writing.
18. Mother thinks this child does well in numbers.
19. Mother thinks this child does well in art and drawing.
20. Mother thinks this child plays well with other children.
21. Mother did not like this child's teacher last year.
22. Mother showed this child how to read.
23. Mother showed this child how to say his ABC's.
24. Mother showed this child how to write.
25. Mother showed this child how to count.
26. Mother showed this child how to cut out pictures.
27. Mother helps this child with homework.
28. Mother reads to this child sometimes.
29. This child reads to mother sometimes.
30. Mother looks at this child's lessons.
31. Other people listen to this child.
32. This child listens to what people say.
33. This child teaches new games to the other children.
34. This child helps others with their lessons.
35. This child does not take care of his toys, tablets, and pencils.
36. This child does not like to work.
37. This child likes to help around the house.
38. This child gets angry when he cannot have his way.
39. This is the child who mother spoils too much.
40. Other people in the family are mean to this child.
41. This child is not loved enough.
42. Mother worries that something might happen to this child.
43. This child obeys when he cannot have something he wants even though he doesn't like it.

44. Other people in the family hit this child often.
45. This child likes the way they are.
46. Mother gets mad when this child does not mind.
47. This child fusses too much.
48. This child loves the people who live in their house.
49. This person is alone most of the time.
50. Mother yells at this child when he does not mind.
51. Mother thinks this child is smart.
52. This child gets mad often.
53. This is the child mother likes best.
54. This child likes to play with several friends.
55. This child sometimes spoils the fun.
56. This child wishes that mother would help with the homework.
57. No one likes this child.
58. Mother worries that this child does not eat enough.
59. This child wants to be alone.
60. This child is punished too often.
61. Mother will let this child buy things at the store.
62. This child shows mother their lessons.
63. This child does not like to be at home.
64. This child gets mad quickly.
65. This child feels afraid.
66. This child does not want to let others down.
67. This child feels sad.
68. This child always wants to be with mother.
69. This child has problems.
70. This child does what others ask him to do.
71. People at home make this child feel afraid.
72. This child loves his mother.
73. This child wants more friends.
74. This child fights with other children sometimes.
75. This child does not love others in the family enough.
76. This child does not want to show mother their lessons.
77. This child likes their family.
78. Mother punishes this child when he does not do what he's supposed to do.
79. Mother is proud of this child.
80. Sometimes this child would like to hurt somebody at home.
81. Others in the family get mad at this child.
82. This child does not like to wait.
83. Mother spansks this child.
84. This child can do what he wants to do.
85. Mother worries that this child might get run over.
86. Sometimes this child does not like somebody in the family.
87. This child cries when he cannot have his way.
88. This child does not like the way they are.
89. Mother worries that this child might get sick.
90. Mother tries to help this child understand when they are bad.

Appendix B

Sample Distribution, Design of Analyses, and Summary Tables of Statistical Analysis

Sample Distribution

Table I

Distribution of Older Siblings by ETP Treatment Group,
Sex, and Date of School Entrance

		T ₁ *	T ₂ *	T ₃ *	T ₄ *	Total
Boys	1963	2	0	6	5	22
	1964	2	4	3	0	
Girls	1963	4	3	5	6	27
	1964	3	4	0	2	
Total	1963	6	3	11	11	
	1964	5	8	3	2	
Total N		11	11	14	13	49

* Notes - Early Training Project treatment groups have been designated

T₁ - Those Ss randomly assigned to the treatment group receiving three consecutive summers of preschool work.

T₂ - Those Ss randomly assigned to the treatment group receiving two consecutive summers of preschool work.

T₃ - Those Ss randomly assigned to the proximal comparison group from the same community as T₁ and T₂ receiving no preschool program.

T₄ - Those Ss randomly assigned to the distal comparison group from a similar community 60 miles distant receiving no preschool program.

School Achievement

Table 2

Summary of Analysis of Variance of Metropolitan Achievement Mean Gain Scores for Older Siblings by Treatment Groups

Source	df	MS	F	p
Between Groups	3	.56323	4.269	.01
Within Groups	45	.13194		
Total	48			

$$F_{.95, 3/45} = 2.82$$

Table 3

Critical Difference Comparisons, Means and Standard Deviation for Metropolitan Achievement Mean Gain Scores for Older Siblings by Treatment Groups

Group	T ₁	T ₂	T ₃	T ₄
T ₂	2.06*	--	--	--
T ₃	.002	-2.15*	--	--
T ₄	-1.17	-4.29**	-1.71	--
\bar{X}	.8136	1.1591	.8500	.6308
s	.205	.103	.150	.074

* $p < .05$

** $p < .01$

Table 4

Summary of Analysis of Variance of Stanford Achievement Tests
Gain Scores by Sibling and ETP Groups

Source	df	MS	F	p
ETP Treatment Groups (A)	2	.05	<1.00	ns
Sibling Groups (B)	1	.39	1.63	ns
A X B	2	.01	<1.00	ns
Within Cells (W)	42	.24		
Total	47			

F_{.95} 1/42 = 4.07; 2/42 = 3.22

Personal Adequacy

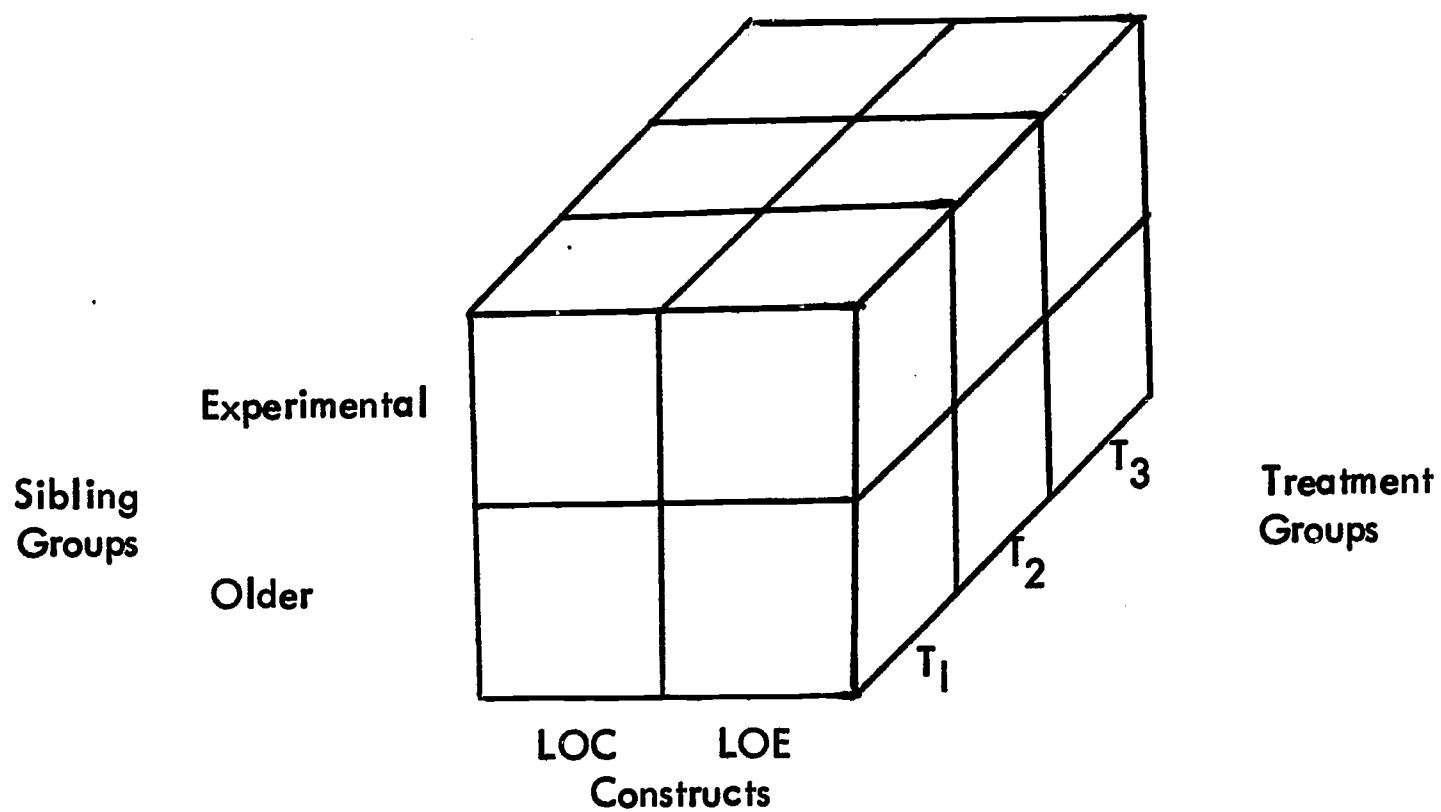


Figure 1. Analysis design for personal adequacy data, Locus of Evaluation and Locus of Control: Mixed design, analysis of variance (Lindquist, 1956).

Personal Adequacy

Table 5

**Summary of Analysis of Variance of "The Way I Feel About Myself"
Data by Sibling and ETP Groups**

Source	df	MS	F	p
ETP Treatment Groups (A)	2	1.72	<1.00	ns
Sibling Groups (B)	1	.06	<1.00	ns
A X B	2	14.62	<1.00	ns
Within Cells (W)	54	21.96		
Total	59			

$F_{.95} \quad 1/54 = 4.02; \quad 2/54 = 3.17$

Table 6

**Summary of Analysis of Variance of Locus of Evaluation and Control
Data by Sibling and ETP Groups**

Source	df	MS	F	p
Between subjects	59	10.18		
Sibling Groups (B)	1	1.01	<1.00	ns
ETP Group (C)	2	2.56	<1.00	ns
B X C	2	1.81	<1.00	ns
Error (Between)	54	10.94		
Within subjects	60	17.02		
Locus Control- Evaluation (A)	1	6.07	<1.00	ns
A X B	1	52.01	3.09	ns
A X C	2	11.43	<1.00	ns
A X B X C	2	15.85	<1.00	ns
Error (Within)	54	16.82		
Total	119			

$F_{.95} \quad 1/54 = 4.02; \quad 2/54 = 3.17$

Classroom Adjustment

Table 7

Summary of Analysis of Variance of Teacher Ratings for Curiosity Behavior. Treatment Groups By Sibling Groups

Source	df	MS	F	p
Sibling Groups (A)	1	1.06		
Treatment Groups (B)	2	1.01		
A X B	2	5.12	3.60	.05
Error	54	1.42		
Total	59			

$$F_{.95} \ 2/54 = 3.18$$

Table 8

Mean and Critical Difference Comparisons for the Simple Effects of the A X B Interaction of Teacher Ratings for Curiosity Behavior

	Treatment Group Means		
	T ₁	T ₂	T ₃
Experimental Siblings	3.5	3.1	3.8
Older Siblings	2.7	4.0	2.9
Mean Difference	.8*	-.9*	.9*

$$\text{Crit.d.}_{.95} = .434$$

	Sibling Groups			
	Experimental		Older	
	T ₂	T ₃	T ₂	T ₃
T ₁	.4	-.3	-1.3*	-.2
T ₂		-.7*		1.1*

$$\text{Crit.d.}_{.95} = .434$$

Family Relations

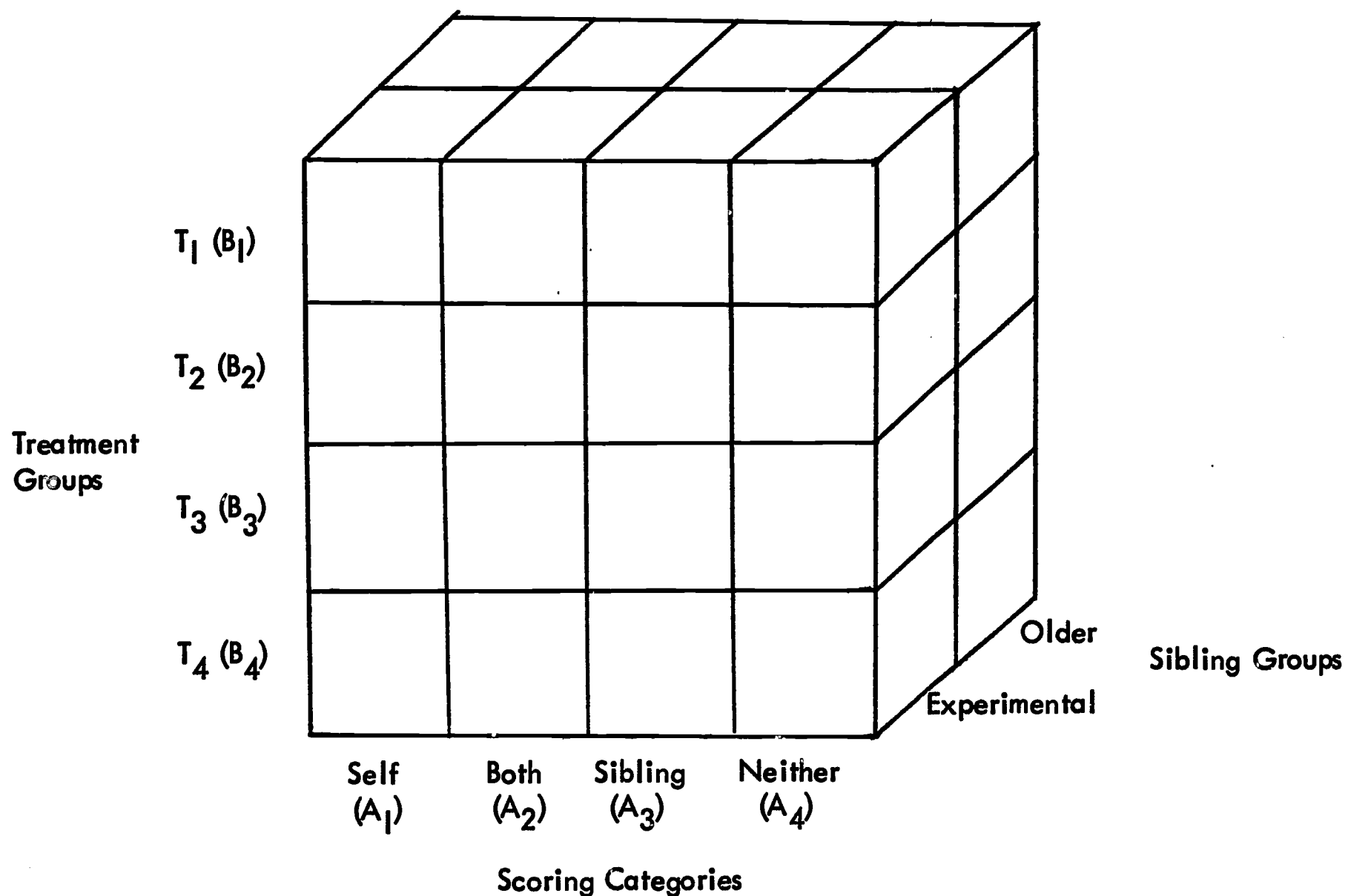


Figure 2. Analysis design for family relations data. Each factor: Outgoing positive, Incoming positive, Outgoing negative, Incoming negative and dependent was submitted to this mixed design, analysis of variance (Lindquist, 1956).

Family Relations

Table 9

Summary of Analysis of Variance of Outgoing Positive Feelings
as Expressed on the Family Relations Test

Source	df	MS	F	p
Between Subjects	79			
Treatment Groups (B)	3	.013	<1.00	ns
Sibling Groups (C)	1	.08	5.82	.05
B X C	3	.03	2.18	ns
Error (between)	72	.01375		
Within Subjects	240			
Scoring Categories (A)	3	20.44	66.64	.05
A X B	3	.86	2.80	.05
A X C	9	.334	1.09	ns
A X B X C	9	.224	< 1.00	ns
Error (within)	216	.3067		
Total	319			

$F_{.95} = df 1/72 = 3.99; df 3/72 = 2.75; df 3/216 = 2.60; df 9/216 = 1.88$

Table 10

Summary of Analysis of Variance of Simple Effects of the Family Relations Test
Category of Outgoing Positive Feelings as Directed Toward Self,
Across All Treatment Groups

Source	df	MS	F	p
Between Treatments	3	.4300	1.54	ns
Within Groups	76	.2796		
Total	79			

$F_{.95} = df 3/60 = 2.76; df 3/120 = 2.68$

Table II
Summary of Analysis of Variance of Simple Effects of the Family Relations Test
Category of Outgoing Positive Feelings as Directed Toward Both,
Across Treatment Groups

Source	df	MS	F	p
Between Treatments	3	.5266	1.28	ns
Within Groups	76	.4112		
Total	79			

$F_{.95} = df\ 3/60 = 2.76; df\ 3/120 = 2.68$

Table I2
Summary of Analysis of Variance of Simple Effects of the Family Relations Test
Category of Outgoing Positive Feelings as Directed Toward Sibling,
Across Treatment Groups

Source	df	MS	F	p
Between Treatments	3	.05	.2790	ns
Within Groups	76	.1792		
Total	79			

$F_{.95} = df\ 3/60 = 2.76; df\ 3/120 = 2.68$

Table 13

**Summary of Analysis of Variance of Simple Effects of the Family Relations Test
Category of Outgoing Positive Feelings as Directed Toward Neither,
Across Treatment Groups**

Source	df	MS	F	p
Between Treatments	3	.0066	1.00	ns
Within Groups	76	.0732		
Total	79			

$F_{.95} = df\ 3/60 = 2.76; df\ 3/120 = 2.68$

Table 14

Critical Difference Comparison of Group Means for Family Relations
Outgoing Positive Scoring Category for Group B₁

	Self	Both	Sibling	Neither
Self		-.3985*	.4190*	.6000*
Both			.8175*	.9985*
Sibling				.1810
\bar{X}	1.1150	1.5135	.6960	.5150

* Crit.d. .95 = .3428

Table 15

Critical Difference Comparison of Group Means for Family Relations
Outgoing Positive Scoring Category for Group B₂

	Self	Both	Sibling	Neither
Self		-1.1235*	.1185	.2445
Both			1.2420*	1.3680*
Sibling				.1260
\bar{X}	.7595	1.8830	.6410	.5150

*Crit.d. .95 = .3428

Table 16

Critical Difference Comparison of Group Means for Family Relations
Outgoing Positive Scoring Category for Group B₃

	Self	Both	Sibling	Neither
Self		-.7480*	.1900	.4550*
Both			.9380*	1.2030*
Sibling				.2650
\bar{X}	.9270	1.6750	.7370	.4720

*Crit.d. .95 = .3428

Table 17

Critical Difference Comparison of Group Means for Family Relations
Outgoing Positive Scoring Category for Group B₄

	Self	Both	Sibling	Neither
Self		-.6795*	.1405	.3890*
Both			.8200*	1.0685*
Sibling				.2485*
\bar{X}	.8910	1.5705	.7505	.5020

* Crit.d. .95 = .3428

Table 18

**Comparison of Means of ETP Subjects vs. Older Sibling Subjects
on Outgoing Positive Feelings as Expressed on the Family Relations Test**

ETP \bar{X}	Older Sibs \bar{X}
38.56	37.25

ETP Subjects assign significantly more Outgoing Positive feelings to themselves than do the older siblings.

Table 19
Summary of Analysis of Variance of Incoming Positive Feelings
as Expressed on the Family Relations Test

Source	df	MS	F	p
Between Subjects	79			
Treatment Groups (B)	3	.0067		
Sibling Groups (C)	1	.05	6.94	.05
B X C	3	.01	1.39	ns
Error (between)	72	.0072		
Within Subjects	240			
Scoring Categories (A)	3	15.88	41.89	.05
A X B	3	.713	1.88	ns
A X C	9	.547	1.44	ns
A X B X C	9	.067	<1.00	ns
Error (within)	216	.3790		
Total	319			

$F_{.95} = df\ 1/72 = 3.99; df\ 3/72 = 2.75; df\ 3/216 = 2.60; df\ 9/216 = 1.88$

Table 20
Critical Difference Comparison of Scoring Category Main Effects
For Incoming Positive Feelings as Expressed on the
Family Relations Test

	Self	Both	Sibling	Neither
Self		-.7154*	.0593	.3276
Both			.7747*	1.0430*
Sibling				.2683
\bar{X}	.8704	1.5858	.8111	.5428

*Crit.d. $.95 = .6032$

Table 2I

**Comparison of Means of ETP Subjects vs. Older Sibling Subjects
on Incoming Positive Feelings as Expressed on the Family Relations Test**

ETP \bar{X}	Older Sibs \bar{X}
38.62	37.58

**The ETP Subjects perceive themselves as receiving more Incoming
Positive Feelings than do the older siblings.**

Table 22

Summary of Analysis of Variance of Outgoing Negative Feelings
as expressed on the Family Relations Test

Source	df	MS	F	p
Between Subjects	79			
Treatment Groups (B)	3	.0067		
Sibling Groups (C)	1	.00	< 1.00	ns
B X C	3	.03	1.46	ns
Error (between)	72	.0205		
Within Subjects	240			
Scoring Categories (A)	3	12.28	29.63	.05
A X B	3	1.08	2.60	.05
A X C	9	.6467	1.56	ns
A X B X C	9	.4067	< 1.00	ns
Error (within)	216	.4145		
Total	319			

$F_{.95} = df\ 1/72 = 3.99; df\ 3/72 = 2.75; df\ 3/216 = 2.60; df\ 9/216 = 1.88$

Table 23

Summary of Analysis of Variance of Simple Effects of the Family Relations Test
Category of Outgoing Negative Feelings as directed toward Self,
Across All Treatment Groups

Source	df	MS	F	p
Between Treatments	3	.10	< 1.00	ns
Within Groups	76	.2350		
Total	79			

$F = 95\ 3/76 = 2.76$

Table 24

Summary of Analysis of Variance of Simple Effects of the Family Relations Test
Category of Outgoing Negative Feelings as Directed Toward Both, Across
All Treatment Groups, and Comparison of Means for Treatment Groups

Source	df	MS	F	p
Between Treatments	3	.4133	3.03	.05
Within Groups	76	.1364		
Total	79			

$F_{.95} 3/76 = 2.76$

	B ₁	B ₂	B ₃	B ₄
B ₁		-.2940	-.1255	.0175
B ₂			.1685	.3115*
B ₃				.1430
\bar{X}	.6000	.8940	.7255	.5825

* Crit.d. $_{.95} = .3033$

Table 25

Summary of Analysis of Variance of Simple Effects of the Family Relations Test
Category of Outgoing Negative Feelings as Directed Toward Sibling,
Across All Treatment Groups

Source	df	MS	F	p
Between Treatments	3	.3870	1.32	ns
Within Groups	76	.2920		
Total	79			

$F_{.95} 3/76 = 2.76$

Table 26

**Summary of Analysis of Variance of Simple Effects of the Family Relations Test
Category of Outgoing Negative Feelings as Directed Toward Neither
Across All Treatment Groups**

Source	df	MS	F	p
Between Treatments	3	.187	<1.00	ns
Within Groups	76	.660		
Total	79			

$F_{.95}^{3/76} = 2.76$

Table 27

Critical Difference Comparison of Group Means for Family Relations
Outgoing Negative Scoring Category for Group B₁

	Self	Both	Sibling	Neither
Self		.1575	-.3235	-.6275*
Both			-.4810*	-.7850*
Sibling				-.3040
\bar{X}	.7575	.6000	1.0810	1.3850

* Crit.d. .95 = .3986

Table 28

Critical Difference Comparison of Group Means for Family Relations
Outgoing Negative Scoring Category for Group B₂

	Self	Both	Sibling	Neither
Self		-.2170	.0735	-.8440*
Both			.1435	-.6270*
Sibling				-.7705*
\bar{X}	.6770	.8940	.7505	1.5210

* Crit.d. .95 = .3986

Table 29

Critical Difference Comparison of Group Means for Family Relations
Outgoing Negative Scoring Category for Group B₃

	Self	Both	Sibling	Neither
Self		-.1295	-.2470	-1.0000*
Both			-.1175	-.8705*
Sibling				-.7530*
\bar{X}	.5960	.7255	.8430	1.5960

* Crit.d. .95 = .3986

Table 30

Critical Difference Comparison of Group Means for Family Relations
Outgoing Negative Scoring Category for Group B₄

	Self	Both	Sibling	Neither
Self		.1445	-.1640	-.8580*
Both			-.3085	-1.0025*
Sibling				-.6940*
\bar{X}	.7270	.5825	.8910	1.5850

* Crit.d. .95 = .3986

Table 31

**Summary of Analysis of Variance of Incoming Negative Feelings
as Expressed on the Family Relations Test**

Source	df	MS	F	p
Between Subjects	79			
Treatment Groups (B)	3	.0033	<1.00	ns
Sibling Groups (C)	1	.01	1.85	ns
B X C	3	.0033	<1.00	ns
Error (between)	72	.0054		
Within Subjects	240			
Scoring Categories (A)	3	12.20	29.63	.05
A X B	3	.9633	2.34	ns
A X C	9	.5522	1.34	ns
A X B X C	9	.3389	<1.00	ns
Error (within)	216	.4118		
Total	319			

$F_{.95} = df\ 1/72 = 3.99; df\ 3/72 = 2.75; df\ 3/216 = 2.60; df\ 9/216 = 1.88$

Table 32

**Critical Difference Comparison of Scoring Category Main Effects
for Incoming Negative Feelings as Expressed on the
Family Relations Test**

	Self	Both	Sibling	Neither
Self		-.3422	-.2092	-.9121*
Both			.1330	-.5699
Sibling				-.7029*
\bar{X}	.6110	.9532	.8208	1.5231

*Crit.d. $_{.95} = .6288$

Table 33

**Summary of Analysis of Variance of Dependency Feelings
As Expressed on the Family Relations Test**

Source	df	MS	F	p
Between Subjects	79			
Treatment Groups (B)	3	.0066	1.18	ns
Sibling Groups (C)	1	.02	3.57	ns
B X C	3	.00		
Error (between)	72	.0056		
Within Subjects	240			
Scoring Categories (A)	3	3.17	9.91	.05
A X B	3	.85	2.65	.05
A X C	9	.18	<1.00	ns
A X B X C	9	.24	<1.00	ns
Error (within)	216	.32		
Total	319			

$F_{.95} = df\ 1/72 = 3.99; df\ 3/72 = 2.75; df\ 3/216 = 2.60; df\ 9/216 = 1.88$

Table 34

Critical Difference Comparison of Group Means for Family Relations
Dependency Scoring Category for Group B₁

	Self	Both	Sibling	Neither
Self		-.2340	-.0595	-.0550
Both			ns	ns
Sibling				ns
\bar{X}	.9020	1.1360	.9615	.9570

Crit.d. $.95 = .3504$

Table 35

Critical Difference Comparison of Group Means for Family Relations
Dependency Scoring Category for Group B₂

	Self	Both	Sibling	Neither
Self		-.5460*	.0870	-.4055*
Both			.6330*	.1405
Sibling				-.4925*
\bar{X}	.7665	1.3125	.6795	1.1720

Crit.d. $.95 = .3504$

Table 36

Critical Difference Comparison of Group Means for Family Relations
Dependency Scoring Category for Group B₃

	Self	Both	Sibling	Neither
Self		-.4750*	-.2185	-.3770*
Both			.2565	.0980
Sibling				-.1585
\bar{X}	.7040	1.1790	.9225	1.0810

*Crit.d. .95 = .3504

Table 37

Critical Difference Comparison of Group Means for Family Relations
Dependency Scoring Category for Group B₄

	Self	Both	Sibling	Neither
Self		-.3515*	.1480	-.3230
Both			.4995*	.0885
Sibling				-.4110*
\bar{X}	.8545	1.2060	.7065	1.1175

* Crit.d. .95 = .3504

Appendix C

Mother Interview Excerpts of Spontaneous Comparisons Between Early Training Project Subjects and Their Older Siblings

SPONTANEOUS COMPARISONS BETWEEN ETP Ss AND THEIR OLDER SIBLINGS: FORRESTER MOTHER INTERVIEWS - FALL 1964

This appendix includes excerpts from the interviews conducted with the ETP mothers in 1964. Some of the spontaneous comparisons that mothers made between ETP Ss, their older sibling(s), and/or other older children in the community have been extracted and appear here. This material should be viewed as background, qualitative data that seemed to suggest a need for a direct investigation of older siblings. In each excerpt the interviewer's question is stated.

Invidious comparisons, and accounts of the school difficulties that older siblings were facing were particularly noteworthy. On the other hand, there were the clearly positive statements of how the quality of the school work for all children had improved.

The mother's names are coded Mrs. "A" through "L." An "X" is substituted for an ETP Ss' name, and a "Y" for the name of an older sibling. "Z" refers to a younger sibling.

Mrs. A -

- I: Have you noticed any changes in X?
P: Well, she's become a little more mature since she's been in this preschool training. I think she has really matured quite a lot and especially more so than the other children, that didn't have this preschool training.

.....

- I: Can you tell me some of the things that X has learned in summer school?
P: It's been a splendid help to X and I'm sure the other mothers can say the same thing, because neither of my other three children that are in school I don't feel that they had as good a chance as X had. So I know it be a fact that it has been a great help in the beginning of her school year.

Mrs. B -

- I: What are some of the things X does that make you very proud or happy with her?
P: On her writing and she can tend to the baby. She can put the diapers on the baby, dress her, and keep her quiet when the rest of them can't.

Mrs. C -

- I: And what were the teachers trying to do for the children during the summer schools?
P: I think that they was really trying to get them ready for school. I really think

that they taught them things that they needed in school also. I think it was just real fine. I wish my little girl (Z) could go. I think they was trying to help them be mature for school and growing up. I think it help all of them a lots, growing up to be big girls and boys in tead of little baby boys and girls (laughs).

Mrs. D -

I: How do you go about teaching her that (manuscript writing) for instance?

P: Well, I just sat down and showed her and I would do so much and then I would let her go over and try to do what I had done and if that has not worked I think you have to spend a little time with them, I think that's it. I try to give them my time as much as I can. I'd like to give them more sometimes, but I think I've spent more time with X than any of the rest of them.

.....

I: If someone gave you \$10.00 for X, how would you spend it for her, saying that unlike any other child you ever saw, she had enough clothes?

P: As I stated previously she likes to color and I spent more money for coloring books and crayons here lately for her than any of the other children, and I guess I'd continue to do that.

.....

I: Do you know what the teachers were trying to do for the children in summer school?

P: Well -- I think that they were preparing them for the 1st grade level in school and getting them ready for it. So many of the children hadn't been taught some of the things at home.

Mrs. E -

I: What does X do that makes you proud of him?

P: He sit down and kinda talk and when he's quiet, it's hard to keep him still, because he's kinda a busy child. It's when he set down quiet and when he's interested in tell you what he has to do in school and tries to tell you what he has to have in school. And he's keeping up with his lessons. He helps around with the baby a lot when I'm busy and I'll just let him stay here in the room with them.

.....

I: What are some of the things X learned the two summers that he was going to summer school?

P: He learned his numbers and how to write his name, learned the alphabet. He learned how to make scrap books. He cut out pictures and things and made a

scrapbook and he got leaves off of different trees. He learned a whole lot of things. I know it was better for him because I had a girl (Y) that started to school at six and she didn't know anything. X knows more than she (Y) does and she's already been to school a year. He had already been to school and she hadn't. He learned to go to school by himself and come back by himself. You know a lot of kids you have to walk them to school.

.....

I: What do you think the teachers were trying to do for the children in the summer schools?

P: Well, they was trying to get them prepared to start school, so they wouldn't be so far behind and I know that was what was wrong with my little girl (Y), she didn't go through this and she didn't hardly know how to write her name, and X knew how to write his name when he went to school, and knew how to say his ABC's and write them too.

Mrs. F -

I: What are ~~some~~ other changes that you've seen in X during the past year?

P: Well, let's see, he likes to take care of his work and he can write pretty good. He can write better than my little girl in the second grade (Y). When he brings his work in I say, "You did nice today," and he shows it to me every day.

.....

I: Have you noticed any change in the way he takes care of his belongings?

P: Oh, he knew how to hang up his clothes and things, but most times when he comes in, he comes in with his notebook and show me his things. Sometime I have time to look at them but if I don't we wait until night. I cut the television off to see about the lessons, after supper. He likes to get it, my other boy messes with him and he don't like that. He'll be trying to write his lessons and he'll holler and tell me to make him stop.

Mrs. G -

I: What kinds of things does he (X) like to do after school?

P: He likes to build things, try to make things. Sometimes he takes his toys apart, but he always knows how to put them back together again, and he likes to do it all by himself. He don't want nobody to help him. He likes to teach the rest of them how to write their name and read.

Mrs. H -

I: What do you think the teachers were trying to do for the children in the summer schools?

P: I think they was trying to help them to be ready for the 1st grade and which I really did think they helped them because I mean some kids is slow about learning and some are faster learning and I think that by them coming out to the house teaching them different things, I think it helps them when they get in the 1st grade. I think they was coming out to help them be ready for the 1st grade, because so many of them aren't and give the mother something to do to help them while they was getting ready like them coming out helping us to teach them, like writing their name. She didn't know how to spell it and when she put it down and I taught her how to spell it before she went to school. But with the others they taught them that in school, and we didn't teach them that at home. You had to wait for that until you go to school to learn it.

Mrs. I -

I: How does she take care of her clothes?

P: Fine. She's not even rough on them. X is a remarkable child. She's the best in the family.

.....

I: If she does anything you don't want her to, how do you get her to stop?

P: Just speak to her and she stops it. I just tell her I don't want that and she won't do it and then she corrects her little sister. Tries to keep her straight. Her sister can make an "O" and almost make an "E." She teaches her sister and her brother (Y). She helps him with his lessons and he's in the second grade.

.....

I: What kinds of things does she do, does she help him with writing or what else?

P: She helps him paint. She hit his hand when he gets out of line and he goes too far over, she'll touch his hand, when he's coloring. She helps him to write and he's doing so much better.

.....

I: What does he say about it?

P: He don't like it, but he'll mind her. She go over his lessons every night with him. She'll get him straight and then she'll work on his.

.....

I: What were the teachers trying to do for the children in the summer schools?

P: They were getting them ready to begin regular school and they got X ready. She's always ready to go (laughs) and the teacher told me that X was doing everything, that she tried to teach her, X already knew it. They have placed X -- she's just good -- X is smart. X knows all the things that the teacher is teaching her now. She know them already. She's just standing by waiting to find some work to do, that she don't know how to do. X is well equipped and ready and

the teacher told me that X knows all that she is teaching already. X hasn't anything to learn, she's just reviewing what she knows.

Mrs. J -

I: Has she changed at all in the way she gets along with her brothers and sisters and playmates?

P: Well, she's always gotten along well with them. They all get along well. She seems to want to make the younger kids mind now, she's always wanting to teach them about school and she has taught my next little girl how to write her first name.

.....

I: Have you noticed any change in the way X takes care of her own belongings?

P: Well, just with school is the only difference I can compare with, but she always picks up her school books. When she comes home, she always takes and get her lesson and then she puts her school satchel up, so the other kids won't get it. She always takes off her clothes as soon as she comes from school and puts them in her drawer, where with her older sister, I have to remind her all the time. X is really better about putting up her clothes and taking care of her things than Y is. She doesn't seem to play with her toys very much since she's going to school.

.....

I: What are some things X does that make you very proud or happy with her?

P: Well she always likes to help me around the house and she always likes to put up clothes and she tries to get the other children to do the same thing and she likes to help Z, she'll go to school next year, and she tries to help Z, like she's her teacher and I'm proud of her, cause Z didn't get to go to kindergarten and I think X has helped her quite a bit. As far as her report card, I'm extra proud of it, cause she got a real good report card. For her first time being in school, I really didn't expect for it to be that well and I was real proud of her. Compared with the other kids in the neighborhood, she got the best report card. Beginners and the ones that been going right along. So we were really proud of that.

Mrs. K -

I: What are some of the things he does that make you very proud of him, or very happy with him?

P: Well, for instance last night they was playing this game of cards he gets from school and my nine years old daughter (Y) the word was "find" and she said found and he smacked her on the knee, he said, "That's wrong, that's wrong. When you lose something then you come along, what do you do? I say you find it, that's the word, I told her she was wrong." But he is just going to school and Y has been going

for three years. But he know the difference between those words.

.....

I: What were the teachers trying to do for X and the other kids in summer school?

P: Oh, I don't know. I could just name a lot of things X learned but I'll run all your tape off talking (laughs). But anyway like I say, he learned to put his things away, be neat, and go back and get them when he put them away and he wouldn't have to ask which one of you ate all my clay, or which one ate my coloring book, he knew where they were so he could go back and find them. That school really helped X, I'm really glad he got to go, and I hope my other kids will get an opportunity to go too.

Mrs. L -

I: I was wondering if you noticed any other changes in X in the past year?

P: Yes, she loves school and loves to read a book. And yesterday she read, she can read a second grade book. She'll read them, she'll attempt to read them and there's a lot of words that she sees in the second grade book that they give her in the first grade, like farther and mother and the dog's names, like that. She'll read out of them pretty good and she had my oldest girl's book last night reading. She's a second grader, and so she read her book last night. Yeah, she can read and she can count and write from 1-100.

.....

I: How does she take care of her own belongings?

P: They have their own personal belongings in their room. They have their own special drawers so it won't be hard to get what they want or get it mixed up with one another. When the other girl (Y) went to school I had to get her a tablet twice a week on ABC tablet and X I guess her tablet lasts her about a month. A quarter tablet.

I: How does that happen?

P: I don't know. I guess X just takes care of it. I don't have to buy nothing through the week you know glue. The teacher asked them to buy glue or paste or pencil or a ruler or something like that. Well X got a satchel and every night when she got home she don't let nobody use them. She might let them use, but she make sure she get it before she go home and so she keeps her stuff entirely better than the older girl does. Right now she takes care of it. She don't believe in leavin' nothin'.

.....

I: Have you noticed a difference in the things she likes to do?

P: A lot of things she likes to do. She wants to help other people do. Now my other little girl (Y), when she get her lesson and X don't have nothin' to do, Nancy wants to help my other little girl (Y) get her lesson. She can take away

in Arithmetic and she can add in Arithmetic and she knows what the minus sign is for and the plus sign is for. And my other little girl (Y) gets mad and makes X come out of the room (laughs). X can usually tell her and she don't want X to know more than she does and so we go and make X look at her tablet. She's almost as good as I am in Arithmetic. She can take away like 2 from 8. She knows like 6 and 6 and 10 and 10 and stuff like that, and she really know how to pronounce words. You know long words and stuff like that, delicious and stuff like that.

.....

- I: What are some things that she does that make you proud of her, or happy with her?
P: I should be proud of both (X and Y) of them. They are going to stick together till they get to school. They come home separate. One comes home at 2:10 and one at 3:10. When Y gets off the bus, she'll stand at the bus door and wait till X gets off the bus and walk Y to her classroom (laughs). But X don't like that. She says she can walk to her own class (laughs).

.....

- I: What do you think the teachers were trying to do for the children in summer school?
P: I think they did a wonderful job for the children. They was trying to help the children so it wouldn't be so hard when they start to school. Like when I started to school, it took five or six months to learn to write my name (laughs). So after going to summer school, and when she started going to school, she already knew how to do that. And all the teacher had to say was X write your name and tell her where to put it.