

FAMILY AND SCHOOL FACTORS RELATED TO
INTERNAL-EXTERNAL LOCUS OF CONTROL
IN KINDERGARTEN CHILDREN

by

Lois Paulson Kezar

A Thesis Submitted to
the Faculty of the Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Master of Science in Home Economics

Greensboro
1976

Approved by


Rebecca M. Smith
Thesis Adviser

KEZAR, LOIS PAULSON. Family and School Factors Related to Internal-External Locus of Control in Kindergarten Children. (1976) Directed by Dr. Rebecca Smith. Pp. 78.

The purpose of this study was to examine the relationship of selected school and family factors to internal-external locus of control in children enrolled in a public school kindergarten.

The 43 children in the study included 18 boys and 25 girls; 31 children were white and 12 were black. The 52 parents of the children who participated in this study included 38 mothers, 12 fathers, and 2 grandmothers.

Locus of control was defined as the degree to which a person believes that he possesses or lacks the power to control the occurrence of reinforcing events in his life. While persons with internal control (internals) tend to perceive events as a consequence of their actions, those persons with external control (externals) tend to believe that reinforcing events are beyond personal control (Rotter, 1954). Locus of control was measured by the Preschool and Primary Nowicki-Strickland Internal-External Control Scale (Nowicki & Duke, 1974).

Instruments used to measure variables associated with IE included: the Bender-Gestalt Test for Young Children (Bender, 1946) as an evaluation of visual motor function, the Peabody Picture Vocabulary Test (Dunn, 1959) as a measure of verbal intelligence, a modified sociogram as a description of the child's relationship with his peers, the adapted

Piers-Harris Self-Concept Scale (1969) as a measure of self-concept, a questionnaire to determine social characteristics of the family, and the Parent Attitude Survey (Shoben, 1949) as a measure of parent attitudes.

The data were analyzed using multiple regression techniques. The findings for these children supported hypothesized relationships between locus of control and Bender-Gestalt scores, intelligence scores, and self-concept scores as well as the following personal and family characteristics: ordinal position of the child, number of siblings, gender of the child, and marital status of the parents. No relationship was found between IE and race, a child's relationship with his peers, or Parent Attitude Survey scores. The relationship of IE to socio-economic class and religion could not be determined because of the homogeneity of the group. Multiple regression analysis indicated that the Bender-Gestalt and self-concept scores were the best predictors of internal-external locus of control.

The significant relationship reported in this study between IE and self-concept, ordinal position, number of siblings, gender, and intelligence scores confirmed earlier research reports. However, the direction of the relationship between IE and two other variables was unexpected. Internal-ity was related to low rather than high Bender-Gestalt scores and to one-parent rather than two-parent families.

CHAPTER I
INTRODUCTION

The relationship between internal-external locus of control (IE) and various other factors appears to be firmly established among older children and adults. In reviewing psychological research regarding locus of control expectancies, Strickland (1973) pointed to three specific areas that seem to be emerging. The first has to do with the relationship between a belief in internal control and physical health or well being. Generally, it appears that internals (persons with internal control) are more likely to take preventive measures to keep themselves healthy and free of disease or the possibility of accident. The second area has to do with psychological well being. Externals (persons with external control) are more likely to be characterized as emotionally disturbed than internals. The third area is that of perceived power. Lefcourt (1973) suggested that the belief that one can control his own fate is necessary for man's ability to resist tyranny and to survive and enjoy his life. He argued that a belief in internal control of reinforcement, even if an illusion, leads people to live adaptively.

Only in recent years have measures been developed which allow researchers to investigate IE in young children.

Nowicki and Strickland (1971) pointed to the need for further research among young children because

how a child perceives the world he lives in, ranging perhaps from chaotic and erratic to predictable and orderly, may play a major role in determining his behavior and his expectancy of receiving reinforcement for that behavior. (p. 1)

The major question of the present research is this: What is the relationship between various family and school factors and IE in kindergarten children?

Operational Definitions

Locus of control (IE) was operationally defined as the degree to which a person believes that he possesses or lacks the power to control the occurrence of reinforcing events in his life (Rotter, 1954). The instrument used to measure IE in this study was the Preschool and Primary Nowicki-Strickland (Appendices C and D) Internal-External Control Scale (PPNS-IE).

Internal control or internality was defined as the perception of reinforcing events as a consequence of one's own actions or one's relatively permanent characteristics (Rotter, 1954).

External control or externality was defined as the belief that reinforcing events are beyond personal control (i.e., dependent on fate, luck, chance, or powerful others) (Rotter, 1954).

Internals were people with internal control. In this study internals were those children receiving a lower than average score on the PPNS-IE.

Externals were people with external control. In this study externals were those children receiving a higher than average score on the PPNS-IE.

Self-concept was defined as the way a person sees himself. In this study self-concept was measured by the adapted Piers-Harris (1969) Children's Self-Concept Scale. Higher scores represented higher self-concepts.

Parent attitudes were defined operationally as the scores received on the Southern California Parent Attitude Survey (PAS) (Shoben, 1949). The PAS places parent attitudes into three categories: Ignoring, Possessive, and Dominant. A Miscellaneous Category includes items which do not pertain to child-rearing practices.

Socio-economic class was determined by education and occupation of the head of the family according to Hollingshead's (1957) Two-Factor Index of Social Position.

Mainline Protestant church was operationally defined as a "connectional" church in which the local congregation is linked to a national or international organization denominationally. Theologically, it is held that religious doctrines must be interpreted in the light of current conditions (Hoult, 1958). Emphasis is placed upon graduate training for the clergy (i.e., Presbyterian, United Methodist, Southern Baptist, United Church of Christ).

Fundamental Protestant church was defined as a Protestant church primarily active at the local level with pulpits frequently filled by lay persons, (i.e., independent Baptist,

Wesleyan Methodist, Pentecostal churches). Theologically, the Fundamentalist wants to go back to what he regards as the purer standards of bygone days (Hoult, 1958).

Limitations of the Study

This study was limited to two public school kindergarten classes at Draper Elementary School in Eden, North Carolina.

Purpose of the Study

The purpose of this study was to examine the relationship of selected family and school factors to internal-external locus of control in children enrolled in a public school kindergarten. It was hypothesized that:

1. School readiness as measured by the following instruments is significantly related to IE scores:
 - (a) Bender-Gestalt Test for Young Children (BG) as an evaluation of visual motor function
 - (b) Peabody Picture Vocabulary Test (PPVT) as a measure of verbal intelligence
2. A child's relationship with his peers as measured by a modified sociogram is significantly related to his IE score.
3. Self-concept scores as measured by the adapted Piers-Harris Children's Self-Concept Scale are significantly related to IE scores.
4. The following personal and family characteristics have a significant relationship to IE scores:
 - (a) gender
 - (b) number of siblings

- (c) ordinal position
- (d) marital status of parents
- (e) socio-economic class
- (f) race
- (g) religion

5. Parent attitudes as measured by the Southern California Parent Attitude Survey (PAS) are significantly related to children's IE scores.

CHAPTER II

REVIEW OF LITERATURE

Expectancy and reinforcement concepts as explanations of behavior date back to Tolman's (1934) sign learning rubric, Lewin's (1951) subjective probability of events, and Hull's (1953) principle of reinforcement. Rotter's (1954) social learning theory brought together the working constructs of expectancy and reinforcement. According to Rotter, locus of control refers to a person's generalized expectancy about whether or not he has power over what happens to him.

Ensuing research (Blackman, 1962; Holden & Rotter, 1962; James & Rotter, 1958; Phares, 1957; and Rotter, Liverant, & Crowne, 1961) investigated the effects of skill and chance perceptions upon performance. These early researchers demonstrated that what a person was led to believe about the locus of control of reinforcement had a definite influence upon his behavior.

The next step, according to Strickland (1973), was to consider whether persons ordinarily carry with them a generalized expectancy about control of reinforcement. It seemed logical to assume that persons who believe that the events that occur in their lives are dependent upon their behavior or are under their personal control (internals) would act

differently than would persons who believe that life events are dependent on powerful others or are a result of fate, luck, or chance (externals).

School Factors

The objective of the Commission of Equality of Educational Opportunity study sponsored by the United States Department of Health, Education, and Welfare, commonly known as the Coleman Report (1966), was to determine the relationship between student achievement and school resources (e.g., numbers of laboratories, textbooks, libraries; curriculums; academic practices; and characteristics of teachers and student bodies). It was based on a survey of over 645,000 school children in the United States. The committee reported that one pupil attitude factor, the extent to which an individual feels he has some control over his own destiny, had a stronger relationship to achievement than all the "school" factors put together.

Scholastic achievement. A positive relationship between school performance and internal control expectancies has been reported by other researchers. McGhee and Crandall (1968) reported that among elementary and high school students, those students described as internal received both higher grades and higher achievement scores. IE was found to be a better predictor of course grades than achievement test scores. Wolfgang and Potvin (1973) compared locus of control scores to classroom participation and grades received by sixth,

seventh, and eighth grade students. For females, more internally controlled students were the highest classroom participators and earned higher grades than low participators. Among males, there were no differences in locus of control between high and low participators. High participation males earned higher grades than did low participators.

Intelligence. Moderate but generally positive correlations between IE and intelligence test scores with internals showing higher intelligence test scores than externals has been reported by several researchers (Bialer, 1961; Crandall, Katkovsky & Crandall, 1965; and Stephens, 1971). However, Nowicki and Roundtree (1971) found no relationship between IE and intelligence scores in twelfth grade students.

Relationship with peers. Nowicki and Roundtree (1971) collected modified sociograms in which twelfth grade students selected other class members as friends and as possible candidates for class president. Student involvement in extracurricular activities was also noted. For males, but not for females, internal locus of control was related to votes received for class president. There was no relationship between locus of control scores and votes received for being a friend. Females were involved in more extracurricular activities than males and the degree of their involvement was significantly related to internality.

Developmental aspects. There does appear to be a developmental aspect to internal control expectancies. Several

researchers (Bialer, 1961; Milgram, 1971; Nowicki and Strickland, 1971; Pawlicki, 1974; and Stephens, 1972) reported age-related increments in internal locus of control consistent with the expectation that children become increasingly competent in affecting their environment and increasingly aware that their behavior is instrumental in affecting consequences. Bartel (1971) reported that while middle-class children become significantly more internally controlled from grades one to six, lower-class children remain at relatively the same level of external control from grades one to six.

Type of educational program. Skeen (1973) reported that students in a community-controlled school (a school largely autonomous of the central school system and one in which parents had significant input) were more internal than pupils in a traditional school when asked questions about general life situations. This was supported by Stephens' and Delys' (1973) report that less structured programs (e.g., Montessori and open classroom models) seemed to enhance internal control development more than the more structured programs.

It is entirely possible, in fact, that many programs, by focusing on cognitive training and employing highly structured teaching techniques, may actually increase the child's perceiving that it is others, not he, who are responsible for his learning or not learning. (Stephens & Delys, 1971, p. 1)

Family Factors

According to the Coleman Report (1966), there was a significant relationship between achievement in school and

the student's family and social class background. Lickona (1971) raised an interesting question in this regard: Why did families make a difference in a student's achievement whereas school resources did not? Lickona speculated that while some parents foster the development of a sense of control over the environment, others do not. In fact, they may feel, especially if they are poor, that they have little influence over events--even the development of their own children.

Gender. Reports differ widely as to the relationship of IE to gender. Battle and Rotter (1963) reported that gender was not a determiner of locus of control scores in their study, although Crandall, Katkovsky, and Crandall (1965) reported that older girls gave more self-responsible (internal) answers than older boys. Likewise, Stephens and Delys (1971) found girls to have higher internal control scores than boys in the Anglo- and Afro-American groups; but they found the reverse sex differences in all other subcultures which were investigated--Chinese-American, Puerto Rican, Chicano, Cuban, and seven different Indian groups. Nowicki and Duke (1974), however, reported a more external mean score for girls than for boys in their Georgia sample of white children.

Ordinal position and family size. Responsibility (IE) scores were found by Crandall et al. (1965) to be moderately related to ordinal position and family size with internal

responses more prevalent among older children and children from small families. Nowicki and Roundtree (1971) reported that relative to family ordinal position, as subjects moved from first to last born, the more likely males were to become external and females to become internal.

Socio-economic and ethnic differences. The interaction of social class and ethnic group was found by Battle and Rotter (1963) to be highly related to internal-external control attitudes. Middle-class children were significantly more internal than lower class children. Lower-class Negroes were significantly more external than middle-class Negroes or whites. Lower-class Negroes with high IQs were more external than middle-class whites with low IQs. (Battle and Rotter suggested caution in interpreting this triple interaction because of the small number of subjects involved.) In a study involving 923 children, Crandall, Katkovsky, and Crandall (1965) found responsibility (IE) scores inconsistently related to social class. Nowicki and Strickland (1971) reported internality for males to be related to socioeconomic class as determined by parental occupational level; the relationship was not as clear when determined by parental education. Strickland (1971) found that Negro children generally appeared to have more external scores than did white children.

Social class differences but no ethnic differences in locus of control scores were found in kindergarten and grade

one children by Milgram, Shore, Riedel, and Malasky (1970). Their study compared distinctly disadvantaged lower-class children and distinctly advantaged middle-class children. A series of studies conducted at Purdue University also compared disadvantaged and advantaged children. Stephens and Delys (1971) stated that by age four economically disadvantaged children showed less internal control expectancy than did nondisadvantaged children. Lower class black and Appalachian white children showed the most extreme external control expectancies in cross-cultural studies involving Afro-American, Anglo-American, Chicano, Puerto-Rican, Cuban, Chinese-American, and American Indian children.

Parental attitudes and behaviors. Child-rearing practices may explain some differences in IE scores between socio-economic classes. Kohn (1969) suggested that middle-class parents are more likely to emphasize self-direction while lower-class parents emphasize conformity to external authority. For example, middle-class mothers seem to punish or refrain from punishing less on the basis of the consequences of their child's misbehavior, and more on the basis of their interpretation of the child's intent than do lower-class mothers.

Reports of studies relating locus of control to parental behaviors and attitudes have been contradictory. Katkovsky, Crandall, and Good (1967) reported that girls whose fathers were especially affectionate and nurturant were less inclined

to believe that they had caused their own failure (were externally controlled). Generally, though, their findings indicated that parent behaviors characterized as warm, praising, protective, and supportive were positively associated with children's belief in internal control. Conversely, such parental behaviors as dominance, rejection, and criticality were negatively associated with beliefs in internal control.

The Perceived Parenting Questionnaire was administered to undergraduate students in a study by MacDonald (1971). Internally controlled subjects described their parents as being warm (nurturant), consistent (predictable), and as encouraging their children to try to control their own reinforcements (achievement pressure). Externally controlled subjects described their parents as using techniques which might give the impression that one's reinforcements are externally controlled, i.e., over-protection, deprivation of privileges, and affective punishment. However, paternal physical punishment and paternal hostility were positively related to internality among males.

Stephens (1972) reported that many of the children with internal scores had mothers who were quite different from the observer's expectations. They appeared, in videotaped observations,

not succorant, supportive, warm, and such but pushy, achievement-oriented coercive, and anything but warm. At times there seemed to be an overt power struggle between mother and child right on the videotape....These mothers seemed to be bending every effort to shape their children. The child must have

known, then, that how his mother would respond would depend on his behavior. (p. 12)

After observing some 80 or 90 mother-child dyads interacting in a structured situation, Stephens (1973) concluded that the variable most consistently and clearly related to the child's IE was "quality of the total relationship."

In looking for mother-behavior correlates of IE, Stephens (1973) found a number of child-behavior correlates of IE. The most consistent variable was the judges' rating of the child's self-concept. Other variables consistently related to internality were activeness and dominance. Two other variables--initiative and task-orientation--were fairly consistently related to internality. Stephens suggested that there may be a reciprocal relationship between internality and such behavioral dispositions. This leads to another possibility, according to Stephens:

Mothers--or teachers, or whoever--can't reinforce internal control expectancies directly, since they aren't behaviors but mediating processes. But they can reinforce these behavioral correlates. It may well be that among the most effective ways mothers do enhance development of internality--and/or can be taught to--is, simply, to reinforce or otherwise encourage these behaviors and thus, indirectly, internality. (p. 9)

Conclusions and Research Focus

From the literature relating locus of control expectancies in children to various school and family factors the following generalizations can be made:

1. A positive relationship seems to exist between school performance and internal control expectancies (McGhee & Crandall, 1968; Wolfgang & Potvin, 1973).

2. A moderate but generally positive correlation seems to exist between IE scores and intelligence test scores with internals showing higher intelligence than externals (Bialer, 1961; Crandall et al., 1965; Stephens, 1971).

3. The relationship with peers as associated with IE appears to be more dependent upon leadership ability than upon friendship (Nowicki & Roundtree, 1971).

4. There appears to be an age-related increment in internal locus of control (Bartel, 1971; Bialer, 1961; Milgram, 1971; Nowicki & Strickland, 1971; Pawlicki, 1974; and Stephens, 1972).

5. Community-controlled schools (Skeen, 1973) and less structured programs (Stephens & Delys, 1973) appear to be positively associated with internality in pupils.

6. Although reports differ, girls appear to receive more internal scores than boys, at least in Afro- and Anglo-American groups (Crandall et al., 1965; Stephens & Delys, 1971).

7. Internality, at least for males, appears to be more prevalent among older children and children from small families (Crandall et al., 1965; Nowicki & Roundtree, 1971).

8. Socio-economic class differences are probably more important than ethnic group membership in determining locus

of control (Battle & Rotter, 1963; Crandall et al., 1965; Milgram et al., 1970; Nowicki & Strickland, 1971; Stephens & Delys, 1971).

9. Reports on the influence of parental attitudes and behaviors in affecting IE are contradictory with no clear pattern emerging (Katkovsky et al., 1967; MacDonald, 1971; Stephens, 1972, 1973).

These findings led to the need for one single study in which nearly all of these variables were included in order to find how much of the variance in IE scores could be explained by each variable.

CHAPTER III

PROCEDURES

The major objective of this study was to examine the relationship between locus of control (IE) and selected school and family factors. The school factors included visual motor function, verbal intelligence, relationship with peers, and self-concept. Family factors included parent attitudes and the following personal and family characteristics: gender, number of siblings, ordinal position, marital status of parents, socio-economic class, race, and religion.

Subjects

The subjects for this study were the 46 children enrolled in public kindergarten classes at Draper Elementary School in Eden, North Carolina. During the course of the school year, one child moved away and two others did not participate in all the testing; therefore, the final group consisted of 43 children.

In order to be enrolled in public school kindergarten, the children were required to be 5 years old by October 16. The children's ages at the time of testing ranged from five to six years.

The group consisted of 18 boys and 25 girls; 31 children were white and 12 were black. Family size ranged from one to six children with all ordinal positions represented within that range.

This group of subjects were nearly homogeneous in socio-economic class and religion. The sample was non-random and only two kindergarten classes in one elementary school were included. The Draper section of Eden, North Carolina, is composed primarily of families in which one or both parents work at one of several local textile mills. Of the 43 families represented in the final sample, three were classified as Class III families according to Hollingshead's (1957) Two-Factor Index of Social Position; 35 families were classified as Class IV, and five families were classified as Class V--the lowest on Hollingshead's scale. Therefore, the families represented in the study were essentially from the upper lower class. Five parents indicated that the family attended a mainline Protestant church, 31 parents indicated that the family attended a fundamental Protestant church, and seven indicated that the family did not attend church.

Instruments and Data Collection

Permission was obtained from school system authorities, including the principal of Draper Elementary School, to collect data from kindergarten children and their parents. Two paraprofessionals were trained to score the locus of control, self-concept, and parent attitude tests.

At a group meeting of parents prior to the beginning of the school year, parents were asked to fill in an information form (see Appendix A) regarding social characteristics of the family:

1. age of child
2. number of siblings
3. ordinal position
4. marital status of parents
5. socioeconomic status of parents
 - a. educational level
 - b. occupation
6. race
7. gender
8. religious background

At this same meeting, parents were asked to sign a consent form allowing their children to be tested (see Appendix B). Parents of all 46 children completed the information form and signed the testing consent form.

Within a two-week period in October, the Preschool and Primary Nowicki-Strickland (Nowicki & Duke, 1974) Internal-External Control Scale (PPNS-IE) was administered to the 46 original subjects (see Appendices C and D).

The PPNS-IE is a locus of control measure for children from four to eight years of age. It consists of 26 cartoon-like illustrations in which one child is asking another child a question. A separate set of cartoons is provided for boys and for girls although the questions are the same. The examiner for this study mounted the cartoons individually on a small piece of poster board (with a different color backing for boys than for girls to aid in keeping the sets of cartoons

separate) so that the subject saw only the cartoon illustrating each question as it was being asked. (The original instrument contains four cartoons per page.)

The reliability of the instrument had been established by correlating the Preschool and Primary NS-IE and the Childrens NS-IE for eight year olds ($r = .78$, $n = 60$, $p < .001$). The six week test-retest reliability for the seven year olds was also acceptable ($r = .79$, $n = 60$, $p < .001$).

Prior to testing, it was determined that anecdotal records would be kept for the four subjects receiving scores showing the most external locus of control and the four subjects receiving scores showing the most internal locus of control. The range of scores was from 6 to 17. The possible range is from 0 to 26.

Five subjects scored between 15 and 17. The names of the two subjects who were closest to the mean with a score of 15 were put into a hat and one was drawn for a total of four externals. Eight subjects scored between 6 and 8. The names of the six subjects who were closest to the mean with a score of 8 were put into a hat and two were drawn for a total of four internals.

Anecdotal records of the four externals and the four internals chosen were kept by the children's kindergarten teachers. Each child was closely observed with behaviors and conversations recorded for one full day. In addition, typical behaviors, comments, and questions were recorded over a

five-month period. Teachers were instructed to record incidents factually with no attempt at interpretation.

Within a two-day time period in December, the 46 original subjects were tested by a team of specialists from the Eden City Schools Central Office. The Peabody Picture Vocabulary Test was administered and scored by two speech and language specialists. The Bender-Gestalt Test was administered and scored by the school psychologist.

The Peabody Picture Vocabulary Test (PPVT) provides an estimate of a subject's verbal intelligence through measuring his hearing vocabulary. The test is introduced by saying, "I want to play a picture game with you. See all the pictures on this page. I will say a word, then I want you to put your finger on the picture of the word I have said."

Reliability coefficients for the PPVT were obtained by calculating Pearson product-moment correlations on the raw scores of the standardization subjects for Forms A and B at each age level. The reliability coefficient for age 5 was determined to be 0.73 (Dunn, 1959).

Validity data for the PPVT were obtained both for individual items and for the total test. "Content" validity was built into the test when a complete search was made of the Merriam Webster New College Dictionary for all words which could be illustrated.

"Item" Validity was established by selecting individual words where the percentage of subjects passing increased from

one age group to the next. Only items demonstrating linear, steep growth curves were retained.

"Concurrent" validity was found by correlating PPVT scores with achievement test scores and teacher ratings of achievement obtained at the same time the PPVT was administered. All correlations were statistically significant (Tempero & Ivanoff, 1960).

"Congruent" validity was established by the correlation of PPVT scores with the Henmon-Nelson Tests of Mental Ability and the California Tests of Mental Maturity. Form B correlations were slightly higher than for Form A, with 0.58 for total CTMM scores and 0.61 for the HNTMA (Tempero & Ivanoff, 1960).

The Bender-Gestalt Test (B-G) was used as a maturational test in visual motor gestalt function in children (Bender, 1946). The test consists of nine cards, each of which has a pattern to be examined and copied by the subject. The individual to be tested is told, "Here are some designs for you to copy. Just copy them the way you see them." The cards are presented one at a time and laid on the table at the top of the sheet of paper which has been given to the subject.

Evaluation of the test does not depend upon the form of the reproduced figures alone but on their relationship to each other, to the spatial background, to the temporal patterning and the clinical setting. The Koppitz (1971) method of scoring was used which is ranged according to age and gives a standard score.

Score to score reliability was determined by Koppitz (1971) and another psychologist who scored 14 Bender Test protocols independently of each other on all twenty scoring categories. There was an agreement on 93 percent of all items scored by the two examiners. In a reliability study Miller, Loewenfeld, Lindner, and Turner (1962) each scored independently 30 Bender protocols from young clinic patients. Copies of the Bender records were also sent to Koppitz for scoring purposes. Pearson product-moment correlations were computed between the test scores of all five raters. Correlations were statistically significant and ranged from .88 to .96.

Each scoring item was validated against first and second grade achievement as measured on the Metropolitan Achievement Test (Hildreth & Griffith, 1946). The subjects for the item analysis were 165 school children selected from six different schools in urban, suburban and rural settings and represented a socio-economic cross section of these areas.

Subjects for the cross validation were 51 young patients seen at a child guidance clinic. The Bender Test was administered to all subjects as a part of a variety of psychological tests they were given during evaluation at the clinic. Chi-squares were computed comparing the number of subjects with and without learning problems whose Bender scores were above or below the mean score for that particular grade level. All chi-squares were statistically significant at the one percent level (Koppitz, 1971).

The adapted Piers-Harris Children's Self-Concept Scale (see Appendix E) was administered within a two-week time span in late February and early March. The Piers-Harris is a self-report instrument including 40 items written as simple declarative statements. After using the instrument with a pilot study involving five children between the ages of four and seven, the investigator simplified the wording in several instances and changed each of the 40 statements into questions to make it more understandable to five year olds. For example, "I am an important member of my class" was changed to "Are you an important person in your class?" (Because the examiner was saying "I", children in the pilot study tended to apply the statements to the examiner rather than to themselves.)

The examiner took the children individually from the classroom to a room down the hall "to play another game." The children were eager to go and frequently asked "When will it be my turn?" or "Can I go again?" When the questions were read to them, some answered in great detail while others barely nodded their heads.

The Piers-Harris is judged to have good internal consistency and adequate temporal stability. The Kuder-Richardson Formula 21, which assumes equal difficulty of items, was employed with resulting coefficients ranging from .78 to .93. As a check, the Spearman-Brown odd-even formula was applied for half the Grade 6 and Grade 10 sample, with resulting coefficients of .90 and .87, respectively. A

retest after four months on one-half the standardization sample resulted in coefficients of .72, .71, and .72 which was judged satisfactory for a personality instrument over so long a period of time (Piers & Harris, 1969).

Mayer (1965) compared scores on the Piers-Harris with scores on Lipsitt's Children's Self-Concept Scale (1958) for a sample of 98 special education students, 12-16 years of age; Mayer obtained a correlation of .68.

The Southern California Parent Attitude Survey (PAS) (Shoben, 1949) is divided into four subscales: (a) Ignoring, (b) Possessive, (c) Dominant, and (d) Miscellaneous. Only the first three subscales are concerned with child-rearing practices. The Miscellaneous Subscale consists of ten emotionally-toned statements about a variety of subjects regarding religion, sex, and socio-economic differences not considered to be child-rearing practices (see Appendix F).

The "ideal" scores were obtained from the responses of eight clinical psychologists who marked the PAS in 1949 in the way they thought an "ideal" parent would mark the items. A higher than mean "ideal" score indicates a less favorable attitude toward child-rearing. A lower than mean "ideal" score indicates a more favorable attitude toward child-rearing.

The reliability coefficients for the survey, determined by the split-half method raised by the Spearman-Brown formula were .95 for the Total Scale, .91 for the Dominant Subscale, .84 for the Ignoring Subscale, and .90 for the

Possessive Subscale, thus indicating a high degree of consistency in the survey.

Validity coefficients were computed for Shoben's (1949) original group of 50 mothers with problem children and 50 mothers with non-problem children. Shoben then computed validity coefficients for a new group of 20 mothers of problem children and 20 mothers of non-problem children. Validity coefficients for both administrations were determined by using the point-biserial coefficient of correlation. The validity coefficients were as follows: Total Scale, .77; Dominant Subscale, .62; Possessive Subscale, .72; and Ignoring Subscale, .62.

All kindergarten parents who came for parent-teacher conferences (see Appendix G) at the end of the first semester were asked to complete the Parent Attitude Survey (PAS) at the conclusion of the conference. Parents were told that there were no right or wrong answers--the PAS was simply a means of reacting to common attitudes about child-rearing.

In 34 cases only one parent completed the PAS. This included 3 fathers, 29 mothers, and 2 grandmothers. In nine cases both parents completed the PAS and their scores were averaged. Of these nine cases in four instances the father's total PAS score was higher and in three cases the mother's total PAS score was higher; two sets of parents filled out a form together.

It took the parents 20-50 minutes to complete the PAS. In some cases, parents had skipped a page and the teacher

asked them to complete the unfinished items before leaving the school.

Five parents said they did not have time to complete the PAS at school and asked to take it home. Of these five, two surveys were not returned even after several notes and phone calls from the teacher. These two subjects were subsequently dropped from the sample.

When individual items were unanswered, the scorer was instructed to determine the mean score for that item on the assumption that the examinee was undecided about the unmarked statement with no strong feelings either way.

Relationship with peers was determined in the following way. After the beginning of the second semester, when the subjects had had the opportunity to become well acquainted, the investigator asked each child to name the two children in the classroom with whom he (or she) best liked to play. The number of times each subject was selected as a first choice and as a second choice was recorded and totaled so that each subject had three scores: (a) number of times selected first as a playmate, (b) number of times selected as second-choice playmate, and (c) total number of times chosen.

Method of Analysis

All the variables were initially included in a multiple regression analysis, but later some variables were deleted. Religion and socio-economic class were deleted because of

the homogeneity within the group of subjects. Race, relationship with peers, and PAS scores were also deleted because in the initial analysis the relationship between these variables and IE did not approach statistical significance.

CHAPTER IV
RESULTS AND DISCUSSION

The purpose of this study was to examine the relationship between internal-external control (IE) and selected school and family factors. The 43 subjects were enrolled in a public kindergarten. It was hypothesized that there would be a relationship between IE as measured by the PPNS-IE (Nowicki & Duke, 1974) and

1. School readiness as measured by the following instruments:

(a) Bender-Gestalt Test for Young Children (BG)

(b) Peabody Picture Vocabulary Test (PPVT)

2. A child's relationship with his peers as measured by a modified sociogram

3. Self-concept scores as measured by the adapted Piers-Harris Children's Self-Concept Scale

4. Social characteristics within the family

(a) gender

(b) number of siblings

(c) ordinal position

(d) marital status of parents

(e) socio-economic class

(f) race

(g) religion

5. Parent attitudes as measured by the Southern California Parent Attitude Survey (PAS)

Multiple Regression Analysis

Multiple regression analysis was performed with Bender-Gestalt scores, self-concept scores, ordinal position, number of siblings, gender, intelligence scores, and marital status of parents as independent variables. Scores on the PPNS-IE ranged from 6 to 17; the mean score was 11.42 with a standard deviation of 2.57 (N=43); these scores were used as the dependent variable.

The multiple regression analysis with IE as dependent variable established the Bender-Gestalt (Bender, 1946) scores as the best predictor of IE scores for the entire sample. Reading the R^2 column (see Table 1), the Bender-Gestalt scores accounted for 18%, using rounded figures, of the total variance of IE scores. The self-concept score accounted for 10% more of the variance. Ordinal position and number of siblings accounted for 1% and 2% more of the variance, respectively. Gender added another 4% and intelligence scores accounted for an additional 1% for a total of 36% accounted for. Marital status of parents added only a small amount to the predictive power of the equation.

Relationship between IE and School Readiness

The Bender-Gestalt Test. Previous research did not refer to the Bender-Gestalt as a correlate of internal-external

Table 1
Multiple Regression Analysis with
IE as Dependent Variable

Dependent Variable	Independent Variables	<u>R</u>	<u>R</u> ²	<u>F</u>	df
Internal-External	Bender-Gestalt	.41909	.17564	8.74**	1/41
N=43	self-concept	.52452	.27512	7.59**	2/40
	ordinal position	.54020	.29182	5.36**	3/39
	number of siblings	.56090	.31461	4.36**	4/38
	gender	.59164	.35004	3.98**	5/37
	IQ	.59624	.35550	3.31**	6/36
	marital	.59718	.35663	2.77*	7/35

* p < .05

** p < .01

MASENO UNIVERSITY COLLEGE
I. R. P. S. LIBRARY

control. The Bender-Gestalt (BG) is used as a clinical instrument to evaluate visual-motor perception and integration. In an analysis of variance of the Bender-Gestalt by IE there was a significant difference ($p < .01$) between internals and externals on BG scores (see Table 2). The hypothesis that a significant relationship exists between IE and BG scores was supported.

Internals had lower BG scores ($\bar{x}=78.52$) while externals had higher BG scores ($\bar{x}=92.91$). (Internals were defined as those subjects who had a lower than mean score [$x=11.42$] on the PPNS-IE and externals were defined as those subjects who had a score higher than the mean.) The higher mean BG score for externals is difficult to explain; one would expect the opposite to be the case. Even when comparing the mean BG scores for boys and for girls (see Table 3) the expected greater maturity of girls at age five to six accounts for only part of the difference. The psychologist who tested the children suggested that perhaps the externals were more praise-oriented, rule-conscious, and eager to please others while internals drew the shapes to please themselves. Whether or not internals actually could have received higher BG scores had they followed directions more closely would have to be determined by some other method. A possibility which must be considered is that this non-random sample does not represent a larger population.

Table 2
Analysis of Variance of Bender-Gestalt by IE

Source	Mean Square	df	<u>F</u>	<u>P</u>
IE	2223.36	1	9.89	.01**
Error	224.86	41		

** $p < .01$

Table 3

Comparison of Mean Bender-Gestalt Test Scores
for Internal-External Boys and Girls

I-E	Boys	Girls
Internal	71.88	82.62
External	90.8	94.67

The Peabody Picture Vocabulary Test. The PPVT provides a standardized estimate of a subject's verbal intelligence. The results of the present study are consistent with those reported by previous researchers (Bialer, 1961; Crandall et al., 1965; and Stephens, 1971) in that a positive correlation was found between IE and intelligence scores. The regression analysis for the PPVT (see Table 1) reached statistical significance at the $p < .01$ level. The hypothesis that a significant relationship exists between IE and intelligence as measured by the PPVT was supported.

Association between IE and Relationship with Peers

Nowicki and Roundtree (1971) collected modified sociograms from high school students. While there was no relationship between locus of control and votes received for friend, they found that internal males received significantly more votes for class president than any other groups. Although children in the present study were not given the opportunity to vote for a class president, each child was asked to name two children in the classroom with whom he (or she) best liked to play. The results were congruent with those of Nowicki and Roundtree in that IE appears not to be related to popularity. The relationship between number of times chosen as playmate and IE was not significant. The hypothesis was rejected.

Relationship between IE and Self-Concept

The subtitle for the Piers-Harris Children's Self-Concept Scale used in the present study is "The Way I Feel about Myself." The correlates of self-concept and the correlates of IE are similar. For example, Cox (1966) reported self-concept to be significantly associated with the child's perception of each parent as loving; Coopersmith (1967) found that self-esteem and tested intelligence generally followed the same rank order; Piers and Harris (1969) correlated self-concept with achievement scores. Stephens (1973) reported that the variable most consistently related to IE in preschool children was the judges' rating of the child's self-concept. As expected, then, the regression analysis for self-concept scores as related to IE reached statistical significance at the $p < .01$ level (see Table 1). Self-concept followed the Bender-Gestalt as the best predictor of IE scores. The BG accounted for 18% of the total variance of IE scores, while the self-concept score accounted for another 10% of the variance. The hypothesis that there is a significant relationship between IE scores and self-concept scores was supported.

Relationship between IE and Social Characteristics within the Family

Gender. Crandall, Katkovsky, and Crandall (1965) and Stephens and Delys (1971) found girls to have more internal scores than boys--at least, in the Anglo- and Afro-American

groups. Nowicki and Duke (1974), however, reported a more external mean score for girls than boys in a Georgia sample of white five- and six-year-olds. The same instrument, the PPNS-IE, was used in the present study as in the Nowicki and Duke study with the same results. The relationship between gender and IE scores reached significance at the $p < .01$ level using multiple regression analysis (see Table 1). The hypothesis that there is a relationship between IE and gender was supported.

As in the Georgia sample, the mean scores for the girls in the present study were more external ($\bar{x}=11.84$, $N=25$) than were the boys' scores ($\bar{x}=10.83$, $N=18$) (see Table 4). It may be that a cultural factor is at work here with Southern girls tending to be more external than their Northern counterparts.

Number of siblings. Crandall, Katkovsky, and Crandall (1965) found responsibility (IE) scores to be moderately related to family size. Subjects who came from families of one or two children were considered "small-family" children, while those from families of three or more children were designated as coming from "large families." Children from "small families" tended to be more internal. This was congruent with findings in the present study (see Table 4); children from "small families" had lower IE scores ($\bar{x}=10.92$, $N=25$) than children from "large families" ($\bar{x}=12.11$, $N=18$). Multiple regression analysis (see Table 1) established number of siblings as a predictor of IE following the Bender-Gestalt

Table 4

Comparison of Social Characteristics and
Mean IE Scores of Subjects

Social Characteristics	N (Total N=43)	\bar{x} (Total \bar{x} =11.42)
Number of siblings		
none or one	25	10.92
two or more	18	12.11
Ordinal position		
oldest or only	13	11.0
middle	8	13.63
youngest	22	10.86
Gender		
girls	25	11.84
boys	18	10.83
Marital status of parents		
one parent	12	10.83
two parents	31	11.65
Race		
black	12	11.42
white	31	11.42

and self-concept ($p < .01$). The hypothesis that there is a significant relationship between IE and number of siblings was supported.

Crandall et al. (1965) suggested that the reason for this relationship is that the child in a one- or two-child family has a greater chance of being recognized as an individual, of having a good deal of attention focused on him, of being required to stand on his own, and of being accountable for his own actions. He cannot be considered just "one of the children." In contrast, the child in a large family is more often involved in larger group activities and is less likely to be able to manipulate the direction of family affairs or to feel personally responsible for the outcome of family decisions.

Ordinal position. Crandall, Katkovsky, and Crandall (1965) reported a moderate relationship between internal-external control and ordinal position with first-born children tending to be the most internal. Nowicki and Roundtree (1971) found that relative to family ordinal position, as subjects moved from first to last born, the more likely males were to become external and females to become internal. Results of the present study were consistent with those of Nowicki and Roundtree. Multiple regression analysis indicated that ordinal position as an independent variable reached significance at the $p < .01$ level (see Table 1). The scores for oldest or only children ($\bar{X}=11.0$, $N=13$) and for

youngest children ($\bar{x}=10.86$, $N=22$) showed little difference; both fell below the group mean of 11.42. Scores for middle children were the most external ($\bar{x}=13.63$, $N=8$) and were well above the mean (see Table 4). The hypothesis that there is a significant relationship between IE scores and ordinal position was supported.

It seems logical to assume that oldest and youngest children receive more parental attention, and perhaps more is expected of them, than middle children. Being a middle child also assumes that one comes from a large family with fewer opportunities to assert oneself as an individual.

Marital status of parents. In reviewing literature related to IE, no reports were found of research investigating the relationship between marital status of parents and IE. In the present study families were classified as "one-parent" or "two-parent" families. If a child lived with a parent who was remarried, his family was classified as "two-parent"; if the parents were divorced, widowed, or separated, the family was classified as "one-parent". In all cases in the present study, the "one-parent" was a female. Multiple regression analysis (see Table 1) established a relationship between IE and marital status of parents ($p < .05$). The mean score for children from "one-parent" families ($\bar{x}=10.83$, $N=12$) was lower than for children from "two-parent" families ($\bar{x}=11.65$, $N=31$; see Table 4). The hypothesis that there is a relationship between IE and marital status of parents was supported.

It is possible that more responsibility and accountability are necessarily placed upon children when there is only one parent. Children in "one-parent" families may be required to "stand on their own" more than children in "two-parent" families.

Race. Battle and Rotter (1963) found the interaction of social class and ethnic group to be highly related to IE. Lower-class Negroes with high IQ's were more external than middle-class whites with low IQ's. Strickland (1971) reported that Negro children, generally, appeared to have more external scores than white children while Milgram (1971) reported no difference in IE scores between black and white children, ages 6-16 in a Catholic parochial school. Results of the present study are congruent with those of Milgram. In a sample consisting of 12 black and 31 white children the mean score for both groups was 11.42 (see Table 4). The hypothesis that there is a significant relationship between IE and race was rejected. Perhaps the "black pride" movement of recent years has helped black children feel that they do, indeed, possess the power to control reinforcing events in their lives.

Relationship between IE and Parent Attitudes

Parent attitudes toward child-rearing were measured by the Southern California Parent Attitude Survey (PAS). The first three subscales on this instrument (a) Ignoring,

(b) Possessive, and (c) Dominant are concerned with child-rearing practices. The Miscellaneous Subscale consists of emotionally-toned statements about a variety of subjects regarding religion, sex, and socioeconomic differences not considered to be child-rearing practices. Multiple regression analysis indicated that the relationship between IE and PAS scores was not statistically significant. The hypothesis that IE is significantly related to parent attitudes as measured by the PAS was rejected.

It is possible that social desirability may have influenced parent responses to PAS statements thereby skewing the results. Another possibility is that a gap may exist between parent attitudes toward child-rearing and actual parental behaviors. For example, one kindergarten teacher observed that a mother who was particularly possessive and protective of her child scored very near the "ideal" in that particular subscale.

Anecdotal Records

As a means of determining whether internals differed from externals on personal characteristics and behaviors, classroom teachers were asked to keep anecdotal records of the four subjects who received scores showing the most internal locus of control and the four subjects who received scores showing the most external locus of control. Each of the eight children was closely observed with behaviors and conversations recorded for one full day. In addition, typical behaviors, comments,

and questions were recorded over a five-month period. Teachers were instructed to record incidents factually with no attempt at interpretation.

Externals. Teacher observations of externals indicated that they had a number of characteristics in common. All were quiet and seemingly attentive during group time. They were content to wait their turn to talk; they did not interrupt.

Even though both kindergarten classrooms were "open" and children were encouraged to move freely from one learning center to another, the externals all asked permission to move to another activity or to use a piece of equipment. At lunch a typical question was: "I don't like the tomato. Do I have to eat it?"

Two of the girls spent much of their time in the house-keeping area; the other preferred to dictate and copy stories. The boy usually chose to play in the block area. All needed direction in getting started with other activities but worked conscientiously at whatever they were asked to do. The externals told their teacher when set-backs occurred but they did not cry or become angry. Two of the children had immature speech patterns and were recommended for a speech class.

Rules were followed to the letter. Sometimes rules were interpreted as being more stringent than they actually were or rules were assumed to exist which did not. For example,

one morning the boy's grandfather came with him to the classroom. The grandfather explained that "Jody has lost his library book and said he couldn't come back to school till we paid for it."

Data obtained in testing included the following information about the four externals who were observed: Intelligence scores as measured by the PPVT ranged from 87 to 101 with three scores right at 100. Two of the children received very low self-concept scores, one was near the mean, and one was above the mean. The three girls were each chosen once as a playmate on the modified sociogram while the boy was chosen four times.

Two externals were middle children in families of three, one was an only child, and one was the youngest child in a family of three. All the children were from two-parent families. The families of the four externals observed were classified as Class IV (Hollingshead, 1957).

Internals. The internals, as a group, were less homogeneous than the externals. Two of the boys exhibited behaviors consistent with those reported by Stephens (1973) in that they were active, dominant, showed initiative and task-orientation.

These boys showed an interest in the group times as long as they were actively participating. They became restless when it was someone else's turn to talk and frequently engaged in "horseplay." They often interrupted other children

in order to share what they had to say. Their comments or answers usually showed insight and understanding. One of the boys frequently preceded an idea for the class with this question "Do you know what we could do sometime?"

During the time that they were in the learning centers, both the boys moved about a good deal before settling down to an activity. Building with blocks, Legos, Lincoln Logs, and other manipulative toys were often their first choices in the centers. Their creations were usually imaginative and carefully constructed; stories which they dictated about what they had built showed that considerable planning had gone into the construction. Their teachers often had to direct them into other activities but they worked hard and did well once they became involved in a project. When reminded to do required work, a common response was "Let me finish this first."

Both boys showed leadership potential and on the modified sociogram were frequently chosen as playmates by others in the classroom. They often anticipated what was coming next--"I bet I know what we're going to do now."

The third boy was less active and dominant than the other two. During group times, he exhibited only incidental listening. He particularly enjoyed story time. During activity time, he spent a good deal of time wandering about the room before settling down to an activity. He often chose writing or art work. None of his classmates chose this boy as a playmate on the modified sociogram. Two of the three

boys sucked their thumbs (one at school, the other at home) and the third had a nervous tic which consisted of closing his eyes and shaking his hands.

The girl represented in the internal group was very quiet--almost timid--in her relationships with the other children. She was chosen by one child as a playmate on the modified sociogram. She made frequent contributions during group time and always seemed to know the answers when questions were asked. This girl preferred playing with the Legos or other manipulative toys. She was the first to learn how to put the roof on a Lego house and taught the other children how to do it.

The internals seemed to take setbacks matter-of-factly. "Somebody tore down my Model-T. I'll just have to build it up again."

Self-concept scores for three of the four internals were well above the mean. The other (one of the active boys) scored just below the mean. Intelligence scores as measured by the PPVT ranged from 91 to 117 for the four children.

Three of the four children's parents expressed concern in parent-teacher conferences about wanting their children to do well in school. One boy said to his teacher "My mother wants me to do well in school so I won't have to work at a bad job like she does." (This boy was the only one of the four internals whose family was classified as Class IV (Hollingshead, 1957). The other three children's families were classified as Class III (middle class).

Three of the four were oldest or only children. The fourth (the less active boy) was the youngest in a family of three. All came from two-parent families.

Conclusions and comments. Externals could generally be described as quiet, content to wait their turn, and conscientious. All were permission-seeking and rule-conscious.

The internal group included both active and quiet children who spent a good deal of time wandering before settling down to an activity, preferred building and creative activities, and made frequent contributions during group times.

Parents of internals showed the most concern about their child's progress in school. These children knew that they were expected to do well as were the internals observed by Stephens (1973).

The high rate of group participation among internals may be related to findings by Wolfgang and Potvin (1973) regarding older children. For females, more internally controlled students were the highest classroom participators and earned higher grades than low participators. High participation males earned higher grades than did low participators.

Observations of externals and internals raised some questions: Was the "horseplay" engaged in by internals during group times caused by the excitation of the learning experience? Is "horseplay" a necessary step in "coming down" or "working out" the excitement of a new concept? Were the externals who sat quietly without interrupting unchallenged

by the situation? Did following the rules take away some of the excitement of learning? Did asking for permission by externals give the needed stamp of approval or take away the fear of failure? Were speech problems tied to the insecurity of verbalizing? Was the quietness of some internals due to identification with parents or was it part of the personality structure of the child? Thumb-sucking and tics indicated some psychological pressure on the internals. Was this pressure home-oriented or inherent in the child's personality type?

Summary

The data from this study supported the hypothesis that IE is related to school readiness as measured by the Bender-Gestalt Test and the Peabody Picture Vocabulary Test. Self-concept scores and several social characteristics within the family were also related to IE. A child's popularity with his peers and parent attitudes as measured by the Parent Attitude Survey were not significantly related to IE.

Multiple regression analysis indicated that the best predictor of IE was the Bender-Gestalt score. Other predictors of IE scores in order of their importance were self-concept scores, ordinal position, number of siblings, gender, intelligence scores, and marital status of parents. It must be remembered that these findings apply only to this small non-random sample.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Psychological research (Strickland, 1973) has pointed to the relationship between a belief in internal control and physical health, emotional health, and the belief that one can control his own fate. The Coleman Report (1966) indicated that the extent to which an individual feels he controls his destiny has a stronger relationship to his achievement than all the "school" factors put together. McGhee and Crandall (1968) reported that among elementary and high school students, those students described as internal received both higher grades and higher achievement scores. If internals, are, indeed, healthier and more successful in school, it behooves parents and teachers to enhance the development of internality.

The purpose of this study was to determine the relationship of selected school and family factors to internal-external locus of control in kindergarten children. Thirteen variables were included in this study in order to find how much of the variance in IE scores could be explained by each variable.

The subjects for this study were 43 children enrolled in a public school kindergarten. The sample included 18 boys and 25 girls; 31 subjects were white and 12 were black.

Family size ranged from one to six children with all ordinal positions represented. In nearly all families represented, one or both parents worked at one of the local textile mills.

The Preschool and Primary Nowicki-Strickland Internal-External Control Scale (Appendices C-D) was used to measure locus of control. The adapted Piers-Harris Children's Self Concept Scale (Appendix E) was administered to measure self-concept. The Peabody Picture Vocabulary Test (Dunn, 1959) provided an estimate of verbal intelligence. The Bender-Gestalt Test (Bender, 1946) was used primarily as a maturational test in visual motor gestalt function.

Social characteristics of the family were gathered by means of a questionnaire filled in by parents at a group meeting prior to the beginning of the school year. At this same meeting, parents were asked to sign a permission slip allowing their children to be tested.

Anecdotal records were kept by two kindergarten teachers describing behaviors and verbalizations of the four children who received the most external PPNS-IE scores and the four children who received the most internal PPNS-IE scores. Teachers were instructed to record incidents factually with no attempt at interpretation.

At the conclusion of each parent-teacher conference scheduled after the close of the first semester, parents were asked to complete the Parent Attitude Survey (PAS) (Shoben, 1949). The PAS places parent attitudes into three categories:

Ignoring, Possessive, and Dominant. A Miscellaneous Category includes items which do not pertain to child-rearing practices.

Relationship with peers was measured by means of a modified sociogram in which subjects were asked to name the two children with whom they best liked to play.

It must be remembered that the subjects in this study constituted a non-random sample. The group was such a homogeneous one from the standpoint of socio-economic class and religious background that it was impossible to determine whether a significant relationship existed between those two variables and locus of control.

Data were analyzed using multiple regression techniques. The multiple regression analysis with IE as the dependent variable established the Bender-Gestalt score as the best predictor of IE scores for the entire sample. Other predictors of IE scores in order of their importance were self-concept scores, ordinal position, number of siblings, gender, intelligence scores, and marital status of parents.

Internality was correlated with low Bender-Gestalt scores. Self-concept scores were positively correlated with internality. Subjects from "small families" had lower mean IE scores (were more internal) than subjects from "large families." Relative to family ordinal position, as subjects moved from first to last born, the more likely males were to become external and females to become internal. Girls' scores tended to be more external than boys' scores. The mean score

for children from one-parent families was lower (more internal) than for children from two-parent families. Mean IE scores for black and for white children were the same.

Anecdotal records kept by classroom teachers indicated that externals could generally be described as quiet, content to wait their turn, and conscientious. All were permission-seeking and rule-conscious. Some internals were active and others were quiet. They spent a good deal of time wandering before settling down to an activity, preferred building and creative activities, and made frequent contributions during group times. Parents of internals showed the most concern about their child's progress in school.

Conclusions and Recommendations

The mean IE scores for the children in this study were more internal than the norms reported for white children by Nowicki and Duke (1974) for the PPNS-IE. Stephens (1973) reported that black children and Appalachian white children had the most external scores yet the location for this study bordered Appalachia and a number of the subjects were black children. One would, therefore, expect the scores for children in this study to be more external. Stephens (1971) suggested that for preschool children less structured programs such as Montessori and "open classroom" models seemed to promote internality. The fact that both kindergartens in this study were "open" classrooms might be a factor. The influence of the school environment is a possibility for further research.

The results of the study showed significant relationships between IE and Bender-Gestalt scores, self-concept scores, ordinal position, number of siblings, gender, intelligence scores, and marital status of parents.

The higher Bender-Gestalt scores for externals is difficult to explain. Even when comparing the mean BG scores for boys and for girls (see Table 3) the expected greater maturity of girls at ages five to six accounts for only part of the difference. A possible explanation is that externals were more praise-oriented, rule-conscious, and eager to please others while the internals drew the shapes to please themselves. Whether or not the internals actually could have scored higher on the Bender-Gestalt Test had they followed directions more closely might be the focus of further research.

The significant relationship reported in this study between IE and self-concept, ordinal position, number of siblings, gender, and intelligence scores confirmed earlier research reports.

It is very difficult to measure parental influence upon locus of control. Social desirability may influence parent responses on instruments such as the PAS. There may also be gaps between parent beliefs or attitudes and actual child-rearing behaviors. Observation of parent-child interactions in a controlled situation might be a more fruitful research project than the self-report technique used in this study. Another possibility for further research would be to compare IE scores for children with IE scores of their parents.

At a time when the number of one-parent families is increasing, further research comparing IE scores of children from one-parent families with those from two-parent families might be of considerable interest.

A longitudinal study following the same subjects through elementary and secondary school could shed more light on the developmental aspects of IE and show a possible relationship between personality types and IE.

Parents and teachers have a common goal in wanting to enhance those qualities in children which lead to scholastic achievement and a successful life. Internal-external control is a quality which is measurable and bears further investigation.

BIBLIOGRAPHY

- Bartel, N. R. Locus of control and achievement in middle- and lower-class children. Child Development, 1971, 42, 1009-1107.
- Battle, E. S., & Rotter, J. B. Children's feelings of personal control as related to social class ethnic group. Journal of Personality, 1963, 3, 482-490.
- Bender, L. Instructions for use of the visual motor Gestalt test. The American Orthopsychiatric Association, Inc., 1946.
- Bialer, I. Conceptualization of success and failure in mentally retarded and normal children. Journal of Personality, 1961, 29, 303-320.
- Blackman, S. Some factors affecting the perception of events as chance determined. Journal of Personality, 1962, 54, 197-202.
- Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., & York, R. L. Equality of educational opportunity. Washington, D. C.: U. S. Printing Office, 1966.
- Coopersmith, S. H. The antecedents of self-esteem. San Francisco: W. H. Freeman & Co., 1967.
- Cox, S. H. Family background effects on personality development and social acceptance. Unpublished doctoral dissertation, Texas Christian University, 1966. Summarized in: Peer acceptance-rejection and personality development, Project N. OE 5-0417, Contract No. OE 2-10-051, U. S. Department of Health, Education, and Welfare.
- Crandall, V. C., Katkovsky, W., & Crandall, V. J. Children's beliefs in their control of reinforcements in intellectual-academic achievement situations. Child Development, 1965, 36, 91-109.
- Dunn, L. M. Manual for the Peabody Picture Vocabulary Test. Nashville, Tenn.: American Guidance Service, 1959.
- Hildreth, G., & Griffith, N. L. Metropolitan Readiness Test. Yonkers-on-Hudson: World Book Co., 1949.

- Holden, K. B., & Rotter, J. B. A nonverbal measure of extinction in skill and chance situations. Journal of Experimental Psychology, 1962, 63, 519-520.
- Hollingshead, A. B. The two-factor index of social class position. New Haven: privately printed, 1957.
- Hoult, T. F. The sociology of religion. New York: Dryden Press, 1958.
- Hull, C. L. Principles of behavior. New York: Appleton-Century-Crofts, 1953.
- James, W. H., & Rotter, J. B. Partial and 100 percent reinforcement under chance and skill conditions. Journal of Experimental Psychology, 1958, 55, 397-403.
- Katkovsky, W., Crandall, V. C., & Good, S. Parental antecedents of children's beliefs in internal-external control of reinforcements in intellectual achievement situations. Child Development, 1967, 38, 766-776.
- Kohn, M. L. Class and conformity. Homewood, Ill.: Dorsey, 1969.
- Koppitz, E. M. The Bender Gestalt test for young children. New York: Grune & Stratton, 1971.
- Lefcourt, H. M. The function of the illusion of control and freedom. American Psychologist, 1973, 28, 417, 426.
- Lewin, K. The nature of field theory. In M. H. Marx (Ed.), Psychological theory. New York: MacMillan, 1951.
- Lickona, T. The psychology of choice. Washington, D. C.: Office of Education, 1971.
- Lipsitt, L. P. A self-concept scale for children and its relation to the children's form of the manifest anxiety scale. Child Development, 1958, 29, 463-472.
- MacDonald, A. P. Internal-external locus of control: Parental antecedents. Journal of Consulting and Clinical Psychology, 1971, 36, 141-147.
- McGhee, P. E., & Crandall, V. Beliefs in internal-external control of reinforcement and academic performance. Child Development, 1968, 39, 91-102.
- Mayer, C. L. A study of the relationship of early special class placement and the self-concepts of mentally handicapped children. Unpublished doctoral dissertation, Syracuse University, 1965.

- Milgram, N. A. Locus of control in Negro and white children at four age levels. Psychological Reports, 1971, 29, 459-465.
- Milgram, N. A., Shore, M. F., Riedel, W. W., & Malasky, C. Level of aspiration and locus of control in disadvantaged children. Psychological Reports, 1970, 27, 343-350.
- Miller, L. C., Loewenfeld, R., Lindner, R., & Turner, J. Reliability of Koppitz' scoring system for the Bender Gestalt. Journal of Clinical Psychology, 1963, 19, 2111.
- Nowicki, S., & Duke, M. P. A preschool and primary internal external control scale. Developmental Psychology, 1974, 10, 874-880.
- Nowicki, S., & Roundtree, J. Correlates of locus of control in secondary age students. Developmental Psychology, 1971, 4, 479.
- Nowicki, S., & Strickland, B. R. A locus of control scale for children. Paper presented at the 79th Annual Convention of the American Psychological Association, Washington, D. C., September, 1971.
- Pawlicki, R. E. Locus of control and the effectiveness of social reinforcers. Journal of Genetic Psychology, 1974, 125, 153-159.
- Phares, E. J. Expectancy changes in skill and chance situations. Journal of Abnormal and Social Psychology, 1957, 54, 339-342.
- Piers, E. V., & Harris, D. B. Manual for the Piers-Harris children's self-concept scale. Nashville, Tenn.: Counselor Recordings and Tests, 1969.
- Rotter, J. B. Social learning and clinical psychology. Englewood Cliffs, N. J.: Prentice-Hall, 1954.
- Rotter, J. B., Liverant, S., & Crowne, D. P. The growth and extinction of expectancies in chance controlled and skill tasks. Journal of Psychology, 1961, 52, 161-177.
- Shoben, E. J. The assessment of parental attitudes in relation to child adjustment. Genetic Psychology Monographs, 1949, 39, 101-148.

- Skeen, E. M. The effects of attending a community controlled school on pupils' perceptions of locus of control. Paper presented at the National Convention of the Association of Black Psychologists, Detroit, August, 1973.
- Stephens, M. W. Cognitive and cultural determinants of early IE development. Paper presented at the American Psychological Association Convention Symposium, Developmental Aspects of Locus of Control Expectancies: New Methods and Prospects, Washington, D. C., 1971.
- Stephens, M. W. Locus of control as mediator of cognitive development. Paper presented at the 80th Annual Convention of the American Psychological Association, Honolulu, September, 1972.
- Stephens, M. W. Parent behavior antecedents, cognitive correlates and multidimensionality of locus of control in young children. Longer version of a paper presented at the 81st Annual Convention of the American Psychological Association, Montreal, August, 1973.
- Stephens, M. W., & Delys, P. Subcultural determinants of locus of control (IE) development. Paper read at the Midwestern Psychological Association Convention, Detroit, May, 1971.
- Stephens, M. W., & Delys, P. External control of expectancies among disadvantaged children at preschool age. Child Development, 1973, 44, 670-674.
- Strickland, B. R. Delay of gratification as a function of race of the experimenter. Journal of Personality and Social Psychology, 1971, 19, 315-320.
- Strickland, B. R. Locus of control: Where have we been and where are we going? Paper presented at the American Psychological Association Convention, Montreal, 1973.
- Tempero, H. E., & Ivanoff, J. M. Effectiveness of the Peabody Picture Vocabulary Test with seventh-grade pupils, unpublished paper. University of Nebraska, 1960.
- Tolman, B. C. Theories of learning. In F. A. Moss (Ed.), Comparative psychology. New York: Prentice-Hall, 1934.
- Wolfgang, A., & Potvin, R. Internality as determinant of degree of classroom participation and academic performance among elementary students. Paper presented at the 81st Annual Convention of the American Psychological Association, Montreal, August, 1973.