LOCUS OF CONTROL AMONG AMERICAN INDIAN YOUTH

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CHAPTER I

THE PROBLEM

The construct of locus of control, derived originally from Rotter's (1954) social learning theory with later modifications (Rotter, 1966), has been the focus of considerable research interest in recent years. Locus of control theory is concerned with differences between internal and external control of behavior. The individual who perceives a connection between his own behavior and subsequent events, good or bad, is said to be internally controlled. The individual who does not perceive behavioral contingencies and instead feels at the mercy of luck, fate, or powerful others, is said to be externally controlled. Using this dichotomy, extensive research has been devoted to utilizing locus of control as a predictor of various behaviors delineated by Rotter (1966). Most of these studies have been done using white, middle class, adult subjects. There is a notable lack of research investigating locus of control and its relationship to certain behaviors, using Native American subjects and only a few studies using child subjects.

Some investigators have explored the construct validity of the concept by comparing locus of control scores of culturally disadvantaged subjects with internal-external (I-E) scores of their white middle class counterparts. The rationale for such a comparison is that poverty class or racial minority subjects do, in fact, have less

control over environmental reinforcement; hence, they should be more external on a measure of perceived locus of control. Findings consistent with this expectation have been obtained. Battle and Rotter (1963) found that lower-class black children were more external than lower-class white children or middle-class subjects of either race. Similarly, in a study of ninth graders of low socioeconomic status, Zytoskee, Strickland and Watson (1971) determined that blacks were more likely than whites to be external. Thus there is evidence that lower-class blacks, who in our society probably do have less control than whites over their fates, are more external than whites. This finding adds to the construct validity of the I-E concept.

Recently a reliable locus of control scale (Nowicki-Strickland, 1972) has been developed specifically for the younger child. Nowicki (1974) examined locus of control on peer relationships. Significant correlations were obtained for males scoring high on internality and two aspects of popularity: respect and liking, while the results for females in the study were not significant.

A few studies have incorporated American Indian children as subjects in exploring locus of control orientation and behavioral correlates. Tyler and Holsinger (1974) compared American Indian students to Caucasian students having the same background. Their results depicted Indian students as being more external than white students. EchoHawk and Parsons (1976) completed a study designed to disclose the relationship between leadership and behavioral problems versus locus of control orientation among American Indian youth. It was predicted that leaders would show an internal locus of control orientation while individuals with behavioral problems would show external control.

The results tended to be in the predicted direction. A significance level of .05 was obtained for the total population of subjects on the internality and leadership correlation. However, when scores for males and females were separated, the relationship remained in the predicted direction, but was not significant for either sex. Locus of control was measured by the Nowicki-Strickland Scale and the teachers rated the students on leadership. The EchoHawk-Parsons study took into consideration that cultural factors and experiential background are different for the American Indian than for members of the dominant culture. It seemed advantageous to incorporate leadership and behavioral problem scales specifically designed to recognize criteria an Indian uses in labeling a child as a "leader" or as a "behavioral problem."

The present investigation is an expanded replication study based on the earlier EchoHawk-Parsons (1976) research. The previous data indicated results close enough to significance to warrant replication. A further effort is made to refine the initial leadership and behavioral problem scales.

CHAPTER II

REVIEW OF THE LITERATURE

Under the guidance of Julian Rotter and with the advice and help of a number of Ohio State University faculty and graduate students, research on generalized expectancy about behavior-reinforcement contingencies began in the late fifties and has continued until the present. Numerous reviews (Joe, 1971; Lefcourt, 1966, 1972; Rotter, 1966; Throop and MacDonald, 1971) and countless publications across almost every conceivable subject population attest to the impact of the internal-external locus of control dimension in psychological experimentation.

Early Work on Locus of Control

The early work of Phares (1957) began in the psychology laboratory when he was able to demonstrate that a subject's perception of control was related to expectancy of success or failure in a judgment task. Under perceived skill conditions, subjects responded to a past experience of success or failure by appropriately wagering bets on their next judgment. Subjects given chance instructions were more likely to adopt a "gambler's" stance as if their success was indeed dependent on luck. James and Rotter (1958) also found that the varying instructions as to whether a task was considered skill or chance influenced extinction trials with subjects in the chance condition showing the usual greater resistance to extinction in a partial reinforcement condition but a

reversal of this effect in the 100 percent skill condition. In his doctoral research, James (1957) found differences between skill and chance groups in acquisition of expectancies and significantly greater generalization of expectancies from one task to another under skill rather than chance instructions. Other studies conducted by Bennion (1961), Blackman (1962), Holden and Rotter (1962), and Rotter, Liverant and Crowne (1961) likewise demonstrated the importance of subject expectancy about response-reinforcement upon learning and perceptual tasks. The impact of these early studies, while perhaps not recognized then, or even now, has to do with the demonstration that what a person is led to believe about the locus of control of reinforcement has a definite influence on his behavior.

Studies Investigating Locus of Control

Based on the previously described laboratory demonstrations, it then became necessary for further investigations to consider whether persons ordinarily carry with them a generalized expectancy about control of reinforcement. It seemed reasonable to assume that persons who believe that the events occurring in their lives are contingent on their behavior or under their personal control and understanding would act differently than persons who were more likely to believe that live events were dependent on powerful others or were a result of fate, luck, or chance. A number of early assessment instruments were devised and investigators began to identify subjects as believing in internal versus external control of reinforcement. Again in the psychological laboratory, Getter (1966), Gore (1962), and Strickland (1970) found that "internals" were more resistant to subtle attempts to control them

than were "externals." Lefcourt and his colleagues (Lefcourt, 1967; Lefcourt, Lewis and Silverman, 1968; Lefcourt and Wine, 1969, Lefcourt and Siegel, 1970) also found that internals were often unresponsive to experimenter's manipulations while externals more readily followed task directions. The laboratory work was consistently supported by research in the field with investigators collecting data in hospitals, schools, prisons, and even in the streets. Seeman and his colleagues were able to show that internals were more likely to attempt to better their life situations than were externals. For example, tubercular patients assessed as internal knew more about their disease and questioned their health staff more often than externals (Seeman and Evans, 1962). Internal prisoners in contrast to matched external prisoners were more likely to remember information they had learned about prison regulations and parole (Seeman, 1962). Gore and Rotter (1963) and Strickland (1965) found internals more than externals likely to commit themselves to and actually engage in civil rights movements during the early sixties. Again, these initial findings were indicative that the locus of control dimension appeared to be a pervasive expectancy variable related to a number of mastery behaviors. Generally, the research unfolded with strong implications that an internal orientation was a healthy and positive attitude related to mastery and competence behaviors for both children (Strickland, 1972) and adults (Lefcourt, 1972). A noteworthy exception to this view was an investigation of black college students by Gurin, Gurin, Lao, and Beattie (1969). Their results suggested that there are indeed real life situations over which a member of a minority group is controlled by "powerful others" and those minority group members more realistically oriented would have a

higher expressed locus of control score. In fact, expressed externality among members of a minority group might be indicative of those individuals who are more aware of actual "barriers" to overcome in adapting to values of the dominant society. Extensive research with the internal-external dimension has been conducted in achievement, competence, delay of gratification, cognitive activity, and defensiveness, all areas which have marked some of the more salient themes running through locus of control research and all of which, along with selected problem areas, have been covered in exhaustive detail in other writings (Lefcourt, 1972).

Trends Emerging in Locus of Control Research

An interesting theme running through locus of control research is the extent to which internals as opposed to externals appear to have more interest in and perhaps be more responsible for their physical health. As mentioned earlier, Seeman and Evans (1962) reported internal tubercular patients to know more about tuberculosis and to ask more health-related questions than external patients. In terms of prevention of disease or accident, it appears that internals are more likely to engage in activities that facilitate physical well being. For example, James, Woodruff, and Werner (1965) replicated a finding by Straits and Secrest (1963) that nonsmokers were significantly likely to be internal than smokers. They also found that following the Surgeon General's report on the dangers of smoking, smokers who were convinced by the evidence in the report were more internal than smokers who were not convinced and internal males were more likely than externals to quit smoking. Platt (1969) also found internals able to change

smoking behaviors to a greater extent than externals. In a study of inoculations against influenza, Dabbs and Kirscht (1971) report that college subjects who were internal, according to eight selected "motivational" variables, were more likely than externals to have been inoculated although internals on eight selected "expectancy" items were more likely not to have taken the shots. These results are somewhat confusing in regard to the relationship between motivation to exert control and expectancy of control but do suggest that the locus of control variable is operating as one takes precautions against influenza. Williams (1972) found greater cigarette smoking among external ninth grade subjects and that internality was related to greater reported seat belt use and preventive dental care (1973). MacDonald and Hall (1971) questioned healthy college students as to how they would respond to various physical handicaps in regard to social relationships and feelings about themselves. Internals anticipated less severe consequences of handicaps than did externals perhaps reflecting the internal's belief that he can adapt to aversive life situations.

Considerable research evidence also suggests that a belief in external control is related to a number of reported and diagnosed psychological disturbances. Among normal subjects, researchers have found externality is related to debilitating although not to facilitating anxiety (Butterfield, 1964; Feather, 1967; Watson, 1967) as well as to the holding of irrational values (MacDonald and Games, 1972) and indices of maladjustment on paper and pencil questionnaires (Hersch and Scheibe, 1967; Wareheim and Foules, 1971). With hospitalized patients, a number of researchers have demonstrated a relationship between externality and severity of psychiatric diagnosis, particularly schizophrenia

(Cromwell et al., 1961; Duke and Mullins, 1973; Harrow and Ferrante, 1969; Lettman and DeWolfe, 1972; Levenson, 1973; Palmer, 1971; Shybut, 1968; Smith, Pryer and Distephane, 1971). These investigations were reviewed in detail by Lefcourt (1973b). Paradoxically, in regard to general psychopathology, locus of control scores in some selected samples of maladaptive functioning persons appear to be more internal than external. In contrast to Palmer (1971) who reports alcoholics to be external, Goss and Morosko (1970) found alcoholics to be more internal than normal controls. Also, Berzins and Ross (1973) found black and white hospitalized narcotic addicts to be more internal than white college student controls. Finally, Harrow and Ferrante (1969) report five upper middle class manic patients in a psychiatric hospital to have a mean score of 4, significantly more internal than reported means for other diagnostic groups and most normal samples. These findings obviously do not fit into the overall schema of externality and psychopathology. However, it should be noted that both of the conduct disorders and the manic symptomotology require some active behavior in contrast to schizophrenia or depression, disorders which are often marked by passivity and withdrawal.

Perceived power is another area of increasing importance in locus of control research. While Rotter (1966) himself did not appear to consider that internals were more controlling or powerful than externals, there is an implicit theme running through most of the later research and writing about locus of control that indeed the internal person is more competent and striving than his external counterpart. Interestingly enough, little research is available which is actually an investigation of the degree to which internals use perceived power.

Lefcourt (1973a) does review a number of animal and human studies on perceived control of aversive stimuli and suggests that the phenomena of perceived "control" is a central determinant of the manner in which one responds to these stimuli. Lefcourt goes on to suggest 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. Lefcourt argues that a belief in internal control of reinforcement, even if an illusion, leads people to live adaptively.

Obviously, research on phenomena of such a general nature as perceived control or power, or perhaps more specifically expectancy of success is difficult but a few studies have recently become available to suggest that internals do use their perceived competency or personal power in ways that lead to different performance outcomes than externals. Goodstadt and Hjelle (1973) had internal and external subjects serve as supervisors to three fictitious workers, one of whom presented a supervisory problem. In dealing with the problem worker, external subjects used significantly more coercive power (e.g., threat of deduction of points, threat of firing) than did internals who relied more upon personal persuasive powers. The investigators explained the results in terms of differential expectancy of successful influence by internals and externals suggesting that internals' positive expectations of successful influence led them to rely upon personal persuasion. Conversely, the use of more coercive powers by externals is consistent with minimal expectancies of successful influence. These results are similar to one of the only other studies considering locus of control in relation to personal influence. Phares (1965) found internals more

persuasive than externals when asked to attempt to change a recipient's expressed attitude on various issues.

A final study somewhat related to internality-externality and personal control is one described by Ryckman and Sherman (1973). These experimenters asked internal and external subjects to select partners or opponents with superior, equal, or inferior abilities for cooperative or competitive tasks. Results indicated that internals were willing to relinquish much of their personal control over the outcome by selecting superior partners for cooperative ventures but only after they had become thoroughly convinced of their own lack of ability on the task. When they perceived themselves as having good ability, internals selected partners of equal ability for cooperative activities. Externals tended to select inferior-ability partners under the same conditions, thus virtually ensuring defeat for their teams. Obviously, at the moment there are more questions than answers, but indeed locus of control expectancies appear to be of significant impact in relation to perceived personal power.

Research on internality-externality has given us considerable understanding of the influence of a generalized expectancy about locus of control on a person's behavior.

Locus of Control With Children

Considering the extensive research information available on the locus of control concept, it is interesting to note that the majority of investigations have used adult subjects. The importance of the locus of control variable to children is emphasized in a study done by Coleman et al. (1966). Their study, using almost half a million

youngsters across the United States, found that a belief in destiny was a major determinant in school achievement. They concluded that this student attitude factor had a stronger relationship to achievement than all other school factors together.

The literature refers to various instruments used in measuring locus of control orientation for children. For example, Bialer (1961) developed a paper-and-pencil measure consisting of 23 items answered yes or no, while Battle and Rotter (1963) constructed a projective device called the Children's Picture Test of Internal-External Control. Research with these measures suggests that locus of control becomes more internal with age and that internality is associated with higher social class and white culture placement as opposed to Negro and lower socioeconomic status. There was no mention of these measures being used to compare American Indian children and their white counterparts. The implicit support given to the notion of a generalized locus of control measure by these findings motivated Crandall, Crandall and Katkovsky (1965) to develop the Intellectual Achievement Responsibility Questionnaire. The basic aim of the questionnaire was an attempt to create a more specific measure to assess children's beliefs in reinforcement in intellectual-academic achievement situations. Their results showed internal beliefs to be moderately related to intelligence, ordinal position, and size of family but inconsistently related to social class. The scale was predictive of younger girls' and older boys' achievement scores.

In general, however, these measures of a child's locus of control of reinforcement have shortcomings in one way or another. Bialer's (1961) scale has defects in the areas of reliability and formal

structure. The split-half reliability in a study by Schaffer, Strickland, and Uhl (1969) was only .49. Moreover, the basic format of the Bialer scale has almost half of the items consecutively keyed in one direction allowing response style to significantly affect scores. Battle and Rotter's (1963) measure is difficult to administer to large groups, and there is incomplete reliability information available. The Crandall et al. (1965) scale is specifically constructed for the academic rather than the general situation, and its forced-choice format may be difficult for younger and less bright subjects.

It has only been recently that the Nowicki-Strickland Scale (1972) has been developed which appears to be an improvement over previous instruments measuring locus of control in children. Test-retest reliabilities sampled at three grade levels, six weeks apart, were .63 for the third grade, .66 for the seventh grade, and .71 for the tenth grade. An additional advantage is the low level of reading skill required making it appropriate for use in a wide number of populations. Further discussion of this scale appears in the following chapter.

Particular emphasis is placed on an almost complete lack of studies which focus on the locus of control orientation relative to the Native American child. Tyler and Holsinger (1974) compared American Indian students to white students having the same background. Their results showed Indian students to be more external than white students. EchoHawk and Parsons (1976) used American Indian students to look at the relationship of leadership and behavioral problem dimensions versus locus of control orientation. The results showed a trend for students rated high on the leadership scale to score in the internal direction

on the Nowicki-Strickland scale for children, while students rated high on the behavioral problem scale scored high on externality.

Literature on Leadership

In marked contrast to the voluminous amount of research on the locus of control variable, there is very little recent work reported detailing leadership. The psychological literature cited here draws on studies that were carried out in the forties and early fifties.

Psychology for the Armed Services (1945) has a section on "The Attributes of Leadership" which suggests that a leader exercises authority, is competent, industrious, confident, responsible, etc. Bird (1940) reviewed approximately 20 inquiries bearing some semblance to controlled investigations and compiled a list of 79 traits which were said to characterize the behavior of leaders. As Bird points out, "Surprisingly little overlapping is found from study to study." The fifties provided us with careful investigations attempting to characterize the followers' opinions regarding typical leadership behavior. Notable among these studies are those of Hemphill (1950), Roff (1950), and Sanford (1950). In each of these studies, respondents were asked to describe the things leaders did or, as in part of Sanford's study, the things leaders should do. While such studies are very useful in suggesting what it is thought leaders do or should do, they may not be valid when used for the American Indian. A frame of reference based on constructs establishing criteria for erecting typologies for the dominant culture may be appropriate only for that population of subjects. It is unfortunate that these studies have not included children in their selection of subjects for investigation. Even so, it would

seem only Caucasian children could be investigated, based on the reasoning stated above, regarding the establishment of criteria.

As far as is known, the EchoHawk-Parsons study (1976), referred to in the previous literature section, has been the only attempt made to construct a scale of leadership designed especially for the Native American child.

Summary and Hypotheses

The review of the literature has shown the following:

1. The importance of the early work of Phares (1957) and its influence on research into the construct of locus of control.

2. The dichotomy, supported by laboratory and field research, of locus of control into "internals" and "externals."

3. The trends emerging in locus of control research, physical health, psychological disturbances, and perceived power are seen as the dominant themes of locus of control investigations.

4. The focus of investigations into the locus of control concept has been with adult populations. The locus of control orientation for children is deserving of more attention.

5. The previous limited work studying children's locus of control has been criticized mainly for using defective measuring instruments. The Nowicki-Strickland scale (1972) appears to have overcome some of the shortcomings found in earlier instruments.

6. There have been many studies made across the black and white populations on the locus of control variable, but relatively few studies made investigating the Native American population, particularly Indian children.

7. The documentation on leadership is quite limited in scope with regard to age and ethnic groups studied. Children and American Indians are conspicuously absent, as targets of study, on the leadership dimension. A notable exception has been the attempt by EchoHawk and Parsons (1976) to construct a valid leadership scale to evaluate American Indian children. Appropriate criteria are lacking according to available literature.

The present study, based on the earlier EchoHawk-Parsons investigation (1976), is replicated with a further attempt made to refine the initial leadership and behavioral problem scales. The ratings carried out in this study have involved the students rating themselves and each other as well as their teachers' ratings.

An item analysis was carried out on the original data obtained from the Nowicki-Strickland scale, to see if certain discriminating items appearing would result in a briefer and better correlated instrument. The discriminators hoped for were delineators between leaders and behavioral problems. The modified Nowicki-Strickland form was administered in addition to the full item scale.

The exploratory study on how American Indian youth perceive Caucasians as well as how they perceive other Indian tribes was also duplicated. This area is patterned after stereotypes of different nationalities (Parsons, Schneider, 1970).

The hypotheses for this study are:

1. Those children rated high on leadership would tend to score high on the locus of control in the internal direction.

2. Those children rated high on the behavioral problem scale

would score more in the external direction on the locus of control scale.

3. The children's process of ratings on the Leadership and Behavioral Problem Scales would show a higher correlation with the locus of control scale than the teachers' ratings.

CHAPTER III

METHOD

Subjects

The subjects were 179 American Indian males and females in the sixth, seventh, and eighth grades from two Bureau of Indian Affairs boarding schools, one located in western Oklahoma (School I) and the other in eastern Oklahoma (School II). The designations given the schools are in the order that the testing was carried out. The total number of subjects described by sex and grade are presented in Table I.

TABLE I

SUBJECTS IN SAMPLE

Grade	N	Males	Females
Sixth	49	21	28
Seventh	51	24	27
Eighth	79	36	43
Total	179	81	98

Table II shows the number of student participation by school.

TABLE II

SUBJECTS FROM SCHOOLS I AND II

Grade	School I			School II		
	N	Males	Females	N	Males	Females
Sixth	31	14	17	18	7	11
Seventh	32	16	16	19	8	11
Eighth	42	14	28	37	22	15
Total	105	44	61	74	37	37

The subjects were homogeneous according to socioeconomic level as indicated by data available from school records. The age range was from 11.3 to 14.6. There were no routine tests administered at either school to assess I.Q. No extensive descriptive data on the subjects, such as tribal affiliation, blood quantum, etc., were obtained due to prior agreement with school authorities. All of the subjects understood English well enough to participate in the study, although a few preferred to use their own tribal language outside the classroom.

Six homeroom teachers were asked to rate their respective class on the leadership and behavioral problem scales. By coincidence, there was an equal number of male and female homeroom teachers. School I had one male and two females, while School II had two males and one female. Four of the teachers were Indians and two were non-Indians.

Measures

The Nowicki-Strickland Locus of Control Scale for Children (1973) is a paper and pencil measure of locus of control (LOC) for children consisting of 40 questions which are answered either yes or no. The Scale was adopted from the Rotter Scale (1966) and contains items which cover a wide range of situations and interpersonal interactions. The Scale yields a measure of a generalized expectancy of reinforcement. Reliability estimates are satisfactory at all grade levels tested (n = 1732, grades three through twelve, test-retest reliabilities ranging from .67 to .81 over time periods of six weeks, and internal consistency reliabilities ranging from .67 to .79). The scale is scored in an external direction with higher scores denoting external orientation.

An item analysis was carried out on the Nowicki-Strickland Locus of Control Scale data obtained in the original EchoHawk-Parsons study (1976). The items which appeared to be likely discriminators of leaders and behavioral problems were then administered to the subjects. The modified version of the Nowicki-Strickland Scale had 13 items.

A leadership and behavioral problem scale was constructed by the investigator. The derivation and construction of the scale are described in detail under phase I of the next section. The rank order correlation for leadership between the two schools, for teachers' rating of subjects, is .80 ($p < .01$) and .86 ($p < .01$) for the behavioral problem scale.

Procedure

Phase I

This first phase consisted of working with a pupil task group. This task group was made up of students whose selections were based on a sociogram, representative of grade (seventh and eighth), sex (male and female), and three typologies (isolate, in-between, most related to).

A teacher from each school, who had good rapport with the students, was asked to help in obtaining the sociogram. Each classroom of seventh and eighth grade students was asked by the teacher to list the names of three people from their class they would most like to be with and the names of three people they would least like to be with. The lists were mailed to the investigator who then constructed the sociogram and selected the pupil task group to participate in the scale construction. Table III shows the task group by grade, sex, and typology.

TABLE III

TASK GROUP FOR CONSTRUCTION OF LEADERSHIP AND BEHAVIORAL PROBLEM SCALE

Typology	School I		School II	
	Grade 7	Grade 8	Grade 7	Grade 8
Isolate	Female	Male	Male	Female
In-Between	Male	Female	Female	Male
Most Related To	Female	Male	Male	Female
Total	3	3	3	3

The students selected were then seen in a group at their respective schools by the investigator. A day was spent at each school. The group was given an explanation of why their help was requested and asked if they chose to participate. The students were not told how they came to be selected or the ultimate use of the scales, but only that the investigator was asking their help to derive scales for leadership and behavioral problems. All the students agreed to be involved in the scale construction.

The investigator made a preliminary comment to the effect that most people would follow one person quite willingly, but not another person. They were asked: "What is there about the person that makes it easy to follow him or her?" Then told: "It's possible each of you may look for the same things in a leader or you may look at different things." Then instructed: "You will be given a sheet of paper to write down or describe what you think makes a person a leader. Do not put your name on the paper and take as much time as you like. This is not a part of your class assignment so you will not be graded on anything you are doing now."

An attempt was made to leave as much openness as possible to the task, therefore they were not told beforehand that each list would be discussed with the entire group until all the papers had been collected. It was not necessary to identify the writers. None of the members of the task group objected to this procedure, although they were still given the option to withdraw from the group if they chose to. A discussion was necessary to consensually validate a list of pupil-oriented leadership qualities. A very lively discussion followed with members of the two task groups being quite ready to agree or disagree with each

other or with the investigator, until the concepts listed were agreed upon.

The behavioral problem scale was derived in a similar manner as the leadership scale. The same task group was used. The instructions and explanation given for the behavioral problem scale was for the group to make a list to describe a person they considered a behavioral problem. The discussion and consensus followed as detailed above for deriving the leadership scale.

In order for a quality or attribute to be included on the final scale, it was necessary for the task groups from both schools to have written them on their lists and to have been in agreement.

Phase II

The second phase of the investigation was the administration of the full item Nowicki-Strickland scale twice to each class. The instructions for each testing was different.

For the administration of the first Nowicki-Strickland scale, each student was asked to place his or her first name on the paper and where there was a duplication of first names to write the last name initial. The students were then instructed to answer every item on the scale the way they wanted to and that there were no right or wrong answers. The students were not told that they would be retaking the scale with a different set of instructions. After all the papers were collected from the first test administration, a color-coded Nowicki-Strickland Scale was handed out randomly to the subjects. The subjects were instructed to label their paper with their name, the same as written on the other test paper. The students having a purple mark on their

papers were asked to imagine themselves to be a white person of the same age and class, and the other half having a red mark on their papers were asked to imagine themselves to be an Indian of another tribe of the same age and class. When the second testing was completed the papers were collected and the students were thanked for their cooperation. The students were not told that there would be another phase of testing to follow in a week.

The derived Leadership and Behavioral Problem Scales, which had been constructed and printed up a week earlier, were left with the teachers at this time to allow them time to rate each of the students from their homeroom. The teachers' ratings were collected at the third and final phase of the investigation.

Phase III

The final phase consisted of the administration of the modified Nowicki-Strickland Scale to each class and self-rating by subjects on the Leadership and Behavioral Problem Scales. Following the self-rating each subject was asked to rate one of his classmates.

The same instructions for labeling of papers were given, as in the Phase II testing. The brief form of the Nowicki-Strickland Scale was administered to the students, papers collected, and the Leadership and Behavioral Problem Scales distributed. The students were asked to rate themselves on both scales for each item listed.

Students were then asked to rate one of their classmates. The names for each classroom of subjects had been compiled from the testing carried out the previous week. Each name from this list was written on a Leadership and Behavioral Problem Scale, prior to Phase III testing

time, then covered with masking tape. Each subject involved in the study was given a pre-labeled rating form with the name of a fellow classmate. The subjects were requested not to look under the tape until everyone had received a copy of the rating scales and not to write their own name on the forms. Next they were asked to raise the tape long enough to read the name under the tape, then to replace the masking tape. They were instructed to rate the individual whose name they had just read, on the Leadership and Behavioral Problem Scales. The forms were filled out and the data collected.

The subjects were told that this completed their part in the study and were complimented for their patience in participating in the investigation. The subjects were told that because the data collected were confidential, it would not be possible to give them information on an individual basis and that the data would eventually be grouped together. The students and teachers were thanked for their cooperation.

Method of Data Analysis

All the data were analyzed by correlational methods with the exception of the exploratory study on stereotypes, which was analyzed by the matched pairs *t* tests.

A correlation coefficient was computed for the full item Nowicki-Strickland Scale relative to the Leadership and Behavioral Problem Scales completed by each of the three methods of rating: the subjects' self-rating, the teacher-rating, and the peer-rating. The modified version of the Nowicki-Strickland Scale was examined relative to the same three rating methods.

The Leadership and Behavioral Problem Scales are presented in blocks according to similarity of quality or attribute. The range of scores for the Leadership Scale is from 11, no leadership qualities, to 55, high leadership ability. The range of scores on the Scale for Behavioral Problems is from 12, no behavioral problem, to 60, extreme behavioral problem. The Nowicki-Strickland Scale, full item and modified version, are scored in an external direction with higher scores denoting external orientation.

The exploratory study comparing the subjects' own LOC orientation with their perception of LOC for whites or members of another tribe used the matched pairs *t* test.

All results were tested at the .05 level of significance.

CHAPTER IV

RESULTS

All hypotheses were examined by correlational methods. The results were analyzed by correlating the full item and modified version of the Nowicki-Strickland Scale with the three ratings of subjects' scores obtained by self-rating, teachers' rating, and peer rating on the Leadership and Behavioral Problem Scales. The total group scores were correlated as well as a correlation of scores for males and females separately. The exploratory study of comparing Indians' LOC scores and their perception of "others" LOC orientation used the matched pairs *t* test.

Full Item Nowicki-Strickland Scale

The subjects' LOC scores from the full item Nowicki-Strickland Scale were correlated with the scores on the Leadership and Behavioral Problems Scales measured by self-rating, teacher-rating, and peer-rating. The correlational coefficients for the total number of subjects are seen in Table IV.

The scores for males and females on the Nowicki-Strickland Scale and Leadership and Behavioral Problem Scales were separated out and correlational coefficients were obtained for these two sets of data; the results are presented in Tables V and VI, respectively.

TABLE IV

CORRELATIONS FOR THE NOWICKI-STRICKLAND SCALE AND CORRELATIVE VARIABLES FOR THE TOTAL NUMBER OF SUBJECTS

Scales	Self-Rating	Teacher-Rating	Peer-Rating
Leadership	-.271**	-.156*	-.081
Behavioral Problem	.159*	.081	-.130

*p < .05.

**p < .01.

The results from the full-item Nowicki-Strickland Scale, for the total number of subjects, supports the hypothesis that subjects scoring high on the Leadership dimension would score high on internality on the LOC when self-rating and teacher-rating scores were considered, but the peer-rating scores did not support the hypothesis (Table IV). The second hypothesis, stating that subjects scoring high on the Behavioral Problem dimension would score high on externality on the LOC, was supported only by the self-rating scores. The third hypothesis, which was that the children's process of rating on the Leadership and Behavioral Problem Scales would show a higher correlation with the LOC scores than the teacher-rating scores, was supported by the self-rating scores, but not by the peer-rating scores. It turned out that the peer-rating scores on the Leadership and Behavioral Problem Scales did not support any of the hypotheses.

TABLE V

CORRELATIONS FOR THE NOWICKI-STRICKLAND SCALE AND CORRELATIVE VARIABLES FOR MALES

Scales	Self-Rating	Teacher-Rating	Peer-Rating
Leadership	-.108	.029	.096
Behavioral Problem	.052	-.066	-.169

TABLE VI

CORRELATIONS FOR THE NOWICKI-STRICKLAND SCALE AND CORRELATIVE VARIABLES FOR FEMALES

Scales	Self-Rating	Teacher-Rating	Peer-Rating
Leadership	-.378**	-.214*	-.184
Behavioral Problem	.199*	.139	.069

*p < .05.

**p < .01.

The results for males and females are looked at separately. Table V depicts the correlational coefficients for males. An interesting finding was that while the data for males was in the predicted direction, but not significant, for the self-rating scores, the results for the teacher-rating and peer-rating scores were not even in the predicted direction. The males, as rated by teachers and peers on the

leadership dimension were seen to score high on externality for LOC and high on the Leadership Scale. Conversely, the male subjects scoring in the internal direction on the LOC, score high on the Behavioral Problem Scale. The results for teacher-rating and peer-rating scores did not support the hypotheses for the male subjects.

The results for female subjects (Table VI) lend support to all the hypotheses for the self-rating scores. The hypothesis of high scores on the Leadership Scale correlating with internality on the LOC orientation was also supported by teacher-rating scores on leadership. Interestingly, the hypothesis that subjects scoring high on externality on the LOC would score high on the Behavioral Problem Scale was in the predicted direction, but did not reach a level of significance. The results of the peer-rating scores on the Leadership and Behavioral Problem Scales for females were also in the predicted direction, but a significant correlational coefficient was not obtained. The experimental results give evidence that males and females are perceived differently on the dimensions of leadership and behavioral problems by their teachers and their peer group.

Modified Form of the Nowicki-Strickland Scale

The thirteen items extrapolated from the full item Nowicki-Strickland Scale were administered to all subjects. The correlational coefficient was used to analyze the data for the scores obtained on the modified version and the scores measured by self-rating, teacher-rating, and peer-rating on the Leadership and Behavioral Problem Scales. The results for the total number of scores are seen in Table VII.

TABLE VII

CORRELATIONS FOR THE MODIFIED NOWICKI-STRICKLAND SCALE AND CORRELATIVE VARIABLES FOR THE TOTAL NUMBER OF SUBJECTS

Scales	Self-Rating	Teacher-Rating	Peer-Rating
Leadership	-.205**	-.305**	-.008
Behavioral Problem	.075	.152*	.056

*p < .05.

**p < .01.

The scores for the modified version of the Nowicki-Strickland Scale were separated by sex, males and females, and the correlational procedure carried out for the LOC scores with the Leadership and Behavioral Problem rating scores. Tables VIII and IX display the results of the analysis.

The results of scores on the modified form of the Nowicki-Strickland Scale correlated with the self-rating, teacher-rating, and peer-rating scores for the total group (Table VII) indicates that self-rating and teacher-rating scores on the Leadership Scale are significant ($p < .01$). The peer-rating scores on the Leadership Scale were in the predicted direction, but the results were not significant. All the results of the three rating procedures suggest that subjects scoring high on leadership tend to score high on internality with the modified version of the Nowicki-Strickland Scale. The LOC scores and behavioral problem scores correlated significantly ($p < .05$) for the

teacher-rating scores, but not for the self-rating and peer-rating scores, although the correlations tend to be in the predicted direction.

TABLE VIII

CORRELATIONS FOR THE MODIFIED NOWICKI-STRICKLAND SCALE AND CORRELATIVE VARIABLES FOR MALES

Scales	Self-Rating	Teacher-Rating	Peer-Rating
Leadership	-.173	-.046	.136
Behavioral Problem	.223*	-.023	-.073

*p < .05.

TABLE IX

CORRELATIONS FOR THE MODIFIED NOWICKI-STRICKLAND SCALE AND CORRELATIVE VARIABLES FOR FEMALES

Scales	Self-Rating	Teacher-Rating	Peer-Rating
Leadership	-.224*	-.515**	-.116
Behavioral Problem	.006	.273**	.134

*p < .05.

**p < .01.

The results for males (Table VIII) suggested a trend for leadership to correlate with internality for the self-rating and teacher-rating scores, although the correlation coefficients did not reach a level of significance. The peer-rating scores for leadership did not indicate a trend in the predicted direction with the LOC scores, but instead showed a tendency for high leadership scores to go with externality on the LOC scores. It is noted that the only significant result for males appeared for the self-rating scores on the Behavioral Problem Scale with the LOC orientation in the external direction ($p < .05$). The teacher-rating and peer-rating scores on the Behavioral Problem Scale showed the same interesting results with the modified Nowicki-Strickland Scale as with the full item Nowicki-Strickland LOC scores; the subjects having a high score on the Behavioral Problem Scale tended to score in the internal direction on the LOC.

The results for females (Table IX) noted significant correlation coefficients for self-rating ($p < .05$) and teacher-rating scores ($p < .01$) with the modified Nowicki-Strickland Scale, giving experimental evidence to the relationship of internal LOC with leadership. While the results for the peer-rating scores on leadership did not correlate significantly with the LOC scores, there was nevertheless a connection of the two variables which helped to sustain the hypothesis of an internal LOC orientation correlation with leadership. The teacher-rating scores on the Behavioral Problem Scale was significant ($p < .01$) when correlated with the LOC scores from the modified Nowicki-Strickland Scale. The self-rating and peer-rating scores on the Behavioral Problem Scale were not significant.

The chief difference seen in the results seems to be how males are rated differently than females on the leadership and behavioral problem dimensions.

Subjects' Perception of "Others" LOC Orientation

The data from the exploratory study of how Indian subjects perceive whites or members of another Indian tribe, on the LOC orientation, was examined by the matched pairs *t* test. Table X shows the results of that analysis.

TABLE X

SUMMARY OF MATCHED PAIRS *t* TEST BETWEEN OWN LOC SCORES AND PERCEIVED LOC SCORES

Perceptions	Self M	"Other" M	Difference	*t*
"Other" Indians (n = 88)	17.23	17.40	-0.17	n.s.
"Whites" (n = 91)	18.38	20.51	-2.13	3.80***

***p < .001.

It appeared that members of another tribe were not perceived as significantly more internal or external than the subjects' own LOC orientation. However, whites were perceived as significantly ($p < .001$) more external than the subjects' own LOC orientation. The

results for subjects' perception of whites, of the same age and class, were consistent with the replicated data, but not the subjects' perception of members of another Indian tribe. The first study of Indian youths' perception of "others" (EchoHawk and Parsons, 1976) had results significant ($p < .05$ for subjects' perception of members of another tribe).

A rank-order listing of attributes and behaviors from the Leadership and Behavioral Problem Scales are also included in Appendix A. The lists were rank-ordered by totaling all the scores from the three rating procedures.

There is a difference in LOC orientation for the Nowicki-Strickland sample of non-Indian subjects and the Native American subjects. To gain a concept of that difference the means and standard deviations from the Nowicki-Strickland sample (1972), the EchoHawk-Parsons study (1976), and the present study are included in Appendix B.

CHAPTER V

DISCUSSION

The results in this study have given some support to hypothesis 1 which stated that children rated high on leadership would tend to score high on the locus of control in the internal direction. The self-rating on the Leadership Scale versus internality on the Nowicki-Strickland LOC Scale was significant ($p < .01$) as was the teacher-rating on leadership versus internality ($p < .05$). The testing of the second hypothesis, that children rated high on the Behavioral Problem Scale would score more in the external direction on the LOC Scale, indicated significance ($p < .05$) by the self-rating process. The last hypothesis which predicted that the children's ratings on the Leadership and Behavioral Problems Scales would show a higher correlation with the locus of control scale than the teacher-ratings was not significant. The data results, discussed above, were based on the scores obtained using the full-item Nowicki-Strickland Scale.

The Leadership and Behavioral Problem Scales used in the EchoHawk-Parsons study (1976) were refined and used in this investigation to replicate and expand the methodology used in the original research. There was a noticeable difference in the results for males and females. The females who rated themselves high on leadership had an internal LOC orientation which had a significant ($p < .01$) correlation. The females who rated themselves high on the behavioral problem dimension had a

significant ($p < .05$) correlation with an external LOC orientation. The results for males had a trend in the same direction described for females above, but there were no significant findings.

A reasonable explanation for these results might be that, in this particular age group, females receive greater reward for conforming to socially acceptable practices while males' acting out behavior is not looked on as disfavorably as acting out behavior for females during these years. On the contrary, males may consider it more "masculine" to be rebellious at this stage of development.

This point of view may explain the nature of the results found in the peer-rating scores and the LOC orientation relationship. The trend observed in the findings from the peer-rating scores on leadership and behavioral problem dimensions is contradictory for males and females. Peers rated the externally-oriented male high on leadership and the internally-oriented male high on the behavioral problem dimension. However, the peer-rating scores for leadership and behavioral problems correlated with the LOC orientation had a trend in the opposite direction for females: externally-oriented females were rated high on the Behavioral Problem Scale and the internally-oriented females were rated high on leadership. It is pointed out that the results from the peer-rating process were not significant and are mentioned here to emphasize the need for further research involving Native American subjects.

Additional support for the "conforming" female and "acting out" male viewpoint may be found in the results from the modified Nowicki-Strickland LOC Scale. The only significant results for males appeared with the modified LOC Scale and the self-rating Behavioral Problem Scale relationship ($p < .05$). It could be that the males were less

threatened by, and maybe even took pride in, seeing themselves high on the Behavioral Problem Scale; but the significant relationship occurred with the males who had an external LOC orientation, consistent with the second hypothesis of this study. The modified Nowicki-Strickland Scale was used in the exploratory manner in this study and speculations based on the results from the modified scale must, of course, be limited.

The results from this study on the perception Indian youth have of "whites" on the LOC orientation replicated the findings of EchoHawk and Parsons (1976). However, the subjects' perceptions of "other Indians" did not duplicate the results from the original data. The results from this study indicate "other Indians" are seen as having a similar LOC orientation while the original data showed "other Indians" were perceived as being significantly more externally oriented than the subjects' own LOC orientation. An attractive thought, based on these findings, is that young Indians may be starting to see themselves in a similar social situation which could be valuable in forming a more cohesive group among all Indians, rather than each tribe viewing itself as quite different from another tribe. Why did the subjects perceive "whites" as being more external than their own LOC orientation? The most obvious reason is seen as the cultural difference. Indian children may tend to view "whites" as being more externally controlled because the "whites" adhere to a different value system not fully understood or appreciated by the Indian child. The Indian child may tend to perceive the "whites" as being influenced by something "out there," or externally controlled, when in fact it could reflect the lack of understanding of one culture for another. So little is known

about child-rearing practices of the American Indians that it seems almost useless to speculate further.

The results of the self-rating and peer-rating procedures emerge as an interesting contrast to the experimental findings using the peer-rating process with non-Indian subjects (Nowicki, 1973). Nowicki, in discussing his results, has this to say:

> Externals, on the other hand, have greater difficulty in realistically estimating their impact on others. These results leave one with the impression that external males are either insensitive to the fact that they are unpopular with their peers or engage in some defensive behavior which helps them to avoid this threatening bit of information.

The findings in this study indicate that American Indian male subjects having an external LOC orientation with the modified Nowicki-Strickland Scale rate themselves high on the Behavioral Problem Scale. This relationship is significant at the $p < .05$ level. It may be that we are looking at an important cultural difference in that Indians are taught to be introspective and can carry out a self-evaluation, but have difficulty in assessing peers as accurately as non-Indians can. This argument is at least not contradicted by the data.

In an overall sense this investigation has been of an exploratory nature. First of all, by giving attention to the previously disregarded area of development of relevant criteria and their interrelationship to the personality variables, internality and externality, among American Indian youth. Second, it was considered worthwhile to modify the Nowicki-Strickland Scale to evaluate its correlation with the Leadership and Behavioral Problem Scales. Third, the interesting area of stereotypes, how American Indian subjects perceive "others" on the LOC orientation was investigated.

The modified Nowicki-Strickland Scale was examined for its value as a possible predictor of leaders and behavioral problems. The results for females' teacher-rating scores on the Leadership and Behavioral Problem Scales correlated with the modified Nowicki-Strickland Scale scores were significant (Table IX). The results for males' self-rating scores on leadership correlated with the modified Nowicki-Strickland Scale scores were in the predicted direction, but did not reach a level of significance. The males' self-rating scores on behavioral problems correlated significantly ($p < .05$) with the modified Nowicki-Strickland Scale scores (Table VIII). Therefore, it appears likely that if only the extreme leadership scores for males were correlated with the modified Nowicki-Strickland Scale scores, a significant relationship would be detected. The modified Nowicki-Strickland Scale might be useful in delineating individuals who fall in the extreme on both the leadership and behavioral problem dimensions.

Implications for Future Research

This study has posed several questions for future research to examine and, hopefully, clarify. One valuable line of investigation would be to assess the continuity of behaviors. Will subjects rated high on leadership still be seen as leaders later on? Do subjects rated high on the behavioral problem dimension at this early level show later adult pathology? Kohlberg et al. (1972) indicate the possibility of predicting adult pathology at an early age in a non-Indian population. Is this true for American Indians? Is there a way to assess cultural differences and thus provide more understanding between

cultures through the absolute approach to value systems and their relationship to personality variables? Clearly, the answers to these questions must be found in further research.

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APPENDIX A

LISTINGS OF ATTRIBUTES AND BEHAVIORS FROM VARIOUS RATING PROCEDURES

Nowicki-Strickland Scale

Item	Yes	No
1. Do you believe that most problems will solve themselves if you just don't fool with them?	___	___
2. Do you believe that you can stop yourself from catching a cold?	___	___
3. Are some kids just born lucky?	___	___
4. Most of the time do you feel that getting good grades means a great deal to you?	___	___
5. Are you often blamed for things that just aren't your fault?	___	___
6. Do you believe that if somebody studies hard enough, he or she can pass any subject?	___	___
7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?	___	___
8. Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?	___	___
9. Do you feel that most of the time parents listen to what their children have to say?	___	___
10. Do you believe that wishing can make good things happen?	___	___
11. When you get punished, does it usually seem it's for no good reason at all?	___	___
12. Most of the time do you find it hard to change a friend?	___	___
13. Do you think that cheering more than luck helps a team to win?	___	___
14. Do you feel that it's nearly impossible to change your parents' minds about anything?	___	___
15. Do you believe that your parents should allow you to make most of your own decisions?	___	___
16. Do you feel that when you do something wrong there's very little you can do to make it right?	___	___

Item		Yes	No
17.	Do you believe that most kids are just born good at sports?	___	___
18.	Are most of the other kids your age stronger than you are?	___	___
19.	Do you feel that one of the best ways to handle most problems is just not to think about them?	___	___
20.	Do you feel that you have a lot of choice in deciding who your friends are?	___	___
21.	If you find a four leaf clover, do you believe that it might bring you good luck?	___	___
22.	Do you often feel that whether you do your homework has much to do with what kind of grades you get?	___	___
23.	Do you feel that when a kid your age decides to hit you, there's little you can do to stop him or her?	___	___
24.	Have you ever had a good luck charm?	___	___
25.	Do you believe that whether or not people like you depends on how you act?	___	___
26.	Will your parents usually help you if you ask them to?	___	___
27.	Have you felt that when people were mean to you it was usually for no reason at all?	___	___
28.	Most of the time, do you feel that you can change what might happen tomorrow by what you do today?	___	___
29.	Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?	___	___
30.	Do you think that kids can get their own way if they just keep trying?	___	___
31.	Most of the time do you find it useless to try to get your own way at home?	___	___
32.	Do you feel that when good things happen they happen because of hard work?	___	___
33.	Do you feel that when somebody your age wants to be your enemy, there's little you can do to change matters?	___	___
34.	Do you feel that it's easy to get friends to do what you want them to?	___	___
35.	Do you usually feel that you have little to say about what you get to eat at home?	___	___

Item		Yes	No
36.	Do you feel that when someone doesn't like you, there's little you can do about it?	___	___
37.	Do you usually feel that it's almost useless to try in school because most other children are just smarter than you are?	___	___
38.	Are you the kind of person who believes that planning ahead makes things turn out better?	___	___
39.	Most of the time, do you feel that you have little to say about what your family decides to do?	___	___
40.	Do you think it's better to be smart than to be lucky?	___	___

Modified Nowicki-Strickland Scale

Item		Yes	No
1.	Do you believe that most problems will solve themselves if you just don't fool with them?	___	___
2.	Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?	___	___
3.	Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?	___	___
4.	When you get punished, does it usually seem it's for no good reason at all?	___	___
5.	Do you believe that most kids are just born good at sports?	___	___
6.	If you find a four leaf clover, do you believe that it might bring you good luck?	___	___
7.	Do you feel that when a kid your age decides to hit you, there's little you can do to stop him or her?	___	___
8.	Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?	___	___
9.	Do you feel that when good things happen they happen because of hard work?	___	___
10.	Do you feel that when somebody your age wants to be your enemy, there's little you can do to change matters?	___	___
11.	Do you usually feel that you have little to say about what you get to eat at home?	___	___
12.	Do you usually feel that it's almost useless to try in school because most other children are just smarter than you are?	___	___
13.	Most of the time, do you feel that you have little to say about what your family decides to do?	___	___

Scale for Leadership

			Never True	Seldom True	Sometimes True	Often True	Almost Always True
			1	2	3	4	5
A.	1.	INTELLIGENT Includes ability to speak in front of other people	( )	( )	( )	( )	( )
	2.	FRIENDLY Includes speaking kindly to other people	( )	( )	( )	( )	( )
	3.	UNDERSTANDING Takes time to listen to others	( )	( )	( )	( )	( )
B.	1.	RESPECTFUL	( )	( )	( )	( )	( )
	2.	HELPFUL	( )	( )	( )	( )	( )
	3.	CONSIDERATE	( )	( )	( )	( )	( )
	4.	GENEROUS	( )	( )	( )	( )	( )
	5.	HONEST	( )	( )	( )	( )	( )
			Very Deficient	Deficient	Neither Deficient nor Outstanding	Outstanding	Very Outstanding
C.	1.	TALENTED (For example, artistic)	( )	( )	( )	( )	( )
	2.	ATHLETIC ABILITIES	( )	( )	( )	( )	( )
	3.	PHYSICAL BUILD	( )	( )	( )	( )	( )

Behavior Problems

			Never True 1	Seldom True 2	Sometimes True 3	Often True 4	Almost Always True 4
D.	1.	SNIFFING (Drugs)	( )	( )	( )	( )	( )
	2.	DRINKS (Alcohol)	( )	( )	( )	( )	( )
E.	1.	UNCOOPERATIVE "Doesn't listen"	( )	( )	( )	( )	( )
	2.	TALKS BACK TO PEOPLE	( )	( )	( )	( )	( )
	3.	TELLS LIES	( )	( )	( )	( )	( )
	4.	"BIG MOUTH" OR TATTLETALE	( )	( )	( )	( )	( )
	5.	"BOSSY"	( )	( )	( )	( )	( )
	6.	RESENTFUL OF OTHERS	( )	( )	( )	( )	( )
	7.	POOR SPORT	( )	( )	( )	( )	( )
	8.	"BULLY"	( )	( )	( )	( )	( )
F.	1.	STEALS	( )	( )	( )	( )	( )
G.	1.	RUNNING AWAY FROM SCHOOL	( )	( )	( )	( )	( )

APPENDIX B

COMPARISON OF LOC SCORES FROM THREE SAMPLES

TABLE XI

A COMPARISON OF THE LOC SCORES FROM THE NOWICKI-STRICKLAND SAMPLE, THE ECHOHAWK-PARSONS SAMPLE, AND THE PRESENT STUDY

	Males			Females		
Grade	M	SD	N	M	SD	N
Nowicki-Strickland						
Sixth	13.73	5.18	45	13.32	4.58	43
Seventh	13.15	4.87	65	13.94	4.23	52
Eighth	14.73	4.35	75	12.29	3.58	34
EchoHawk-Parsons						
Sixth	17.28**	4.68	29	18.47**	3.73	30
Seventh	17.87**	5.13	42	20.60**	6.02	15
Eighth	15.65	3.45	27	15.86**	2.96	22
Present Study						
Sixth	19.10	2.95	21	19.21	3.59	28
Seventh	19.25	4.02	24	18.37	3.85	27
Eighth	15.97	3.92	36	16.67	4.36	43

**$p < .01$ (t tests).

VITA

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