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I am submitting herewith a dissertation written by William Alan Wray entitled "The Personal Construct System of the Learning Disabled Child." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Psychology and Guidance.

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THE PERSONAL CONSTRUCT SYSTEM OF
THE LEARNING DISABLED CHILD

A Dissertation
Presented for the
Doctor of Education
Degree
The University of Tennessee, Knoxville

William Alan Wray

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ABSTRACT

Empirically-based knowledge of the perceptual systems of learning disabled children is scant. Literature addressing the personal and social attributes of children who experience academic difficulties provides diffuse support for the hypothesis that learning disabled children are likely to perceive themselves and others differently than do their non-exceptional peers.

The triadic sort and repertory grid techniques, formulated by George Kelly (1955) in his psychology of personal constructs, were adapted and applied in order to test the hypothesis. Discriminate analyses of the data revealed the presence of marked differences between the learning disabled and non-exceptional groups in their rankings on the "self" and "student in part-time resource" roles. Differences in rankings on other stereotypic roles were equivocal.

Generally, learning disabled children tend to be selectively self-critical and self-bolstering. Learning disabled students tend to be less critical of their learning disabled peers than are non-exceptional students. Recommendations are proffered for educators, counselors, and psychologists working with the population in question. Steps are outlined for future empirical investigation.

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CHAPTER I

INTRODUCTION

I. STATEMENT OF THE PROBLEM

Although much has been theorized regarding the nature of learning disabilities, relatively little information has been accumulated from systematic empirical investigation. Empirically-founded knowledge of the perceptual systems of learning disabled children is particularly scant. Several researchers have called for an extension of inquiry into the perceiver's multidimensional conceptualization of the "other" (Yarrow and Campbell, 1971). Ulric Neisser (1976) has observed:

The cumulative, internally guided nature of perception has not often been discussed by psychologists. This may be because nearly all treatments of this topic are based on vision (p. 14).

For the purposes of the present research, "perception" is not limited to "vision"; rather, perception has been translated into personal construct terminology as formulated by George Kelly (1955). This phenomenological study systematically compares and contrasts selected perceptions of learning disabled and non-exceptional children.

II. RATIONALE FOR UTILIZING PERSONAL CONSTRUCT THEORY

Personal Construct Theory (see Appendix A) provides a basis whereby the construing (i.e., perceptual) patterns of individuals and groups

may be explored facilitating an awareness and understanding of the conceptual and decision-making processes characteristic of those subjects under study. This theory is based upon the assumption that the person is best viewed as "scientist" in the sense that each individual is concerned with the prediction and control of his or her environment. Each person is thought to develop a personal repertoire of constructs by means of which that person interprets his or her world and attempts to anticipate events. In the words of Bannister (1962):

The psychology of personal constructs is concerned with the ways in which personal construct repertoires can be analyzed and described in general terms, and with accounting for the ways in which they develop and change (p. 104).

While Kelly was most interested in maintaining focus upon the individual and upon exploring differences between individuals, more recent proponents of Personal Construct Theory have adapted this approach to the study of group differences; among these are Bannister and Mair (1968):

His theory and practical methods start by paying particular attention to the personal constructions of the individual, but higher order abstractions are proposed which allow idiographic data to be viewed within a nomothetic framework (pp. 11-12).

In the vein of Kelly, a personal construct approach to group differences allows the investigator to study a host of perceptual categories (i.e., bipolar constructs) which are actually utilized by, and therefore relevant to, the subjects under examination.

III. QUESTIONS

The key inquiry pursued by the present investigation is:

Do learning disabled children, as a group, differ from non-exceptional children, as a group, in their constructions of themselves and of significant others in the interpersonal environment?

Five subordinate questions will also be addressed:

Do learning disabled children differ from non-exceptional children in their constructions of themselves?

Do learning disabled children differ from non-exceptional children in their constructions of learning disabled children?

Do learning disabled children differ from non-exceptional children in their constructions of children who are academically successful?

Do learning disabled children differ from non-exceptional children in their constructions of their favorite teacher?

Do learning disabled children differ from non-exceptional children in their constructions of their least favorite teacher?

IV. DEFINITION OF LEARNING DISABILITIES

The term "learning disabilities" came into common use in the mid-1960's. On the surface its usage has appeared to solve the problem of applying multitudinous labels to the same general phenomenon.

Epithets such as Minimal Brain Dysfunction, Brain Injury, Dyslexia, Hyperactive Behavior Syndrome, Strauss Syndrome, Perceptual Disabilities, Reading Disabilities, and others, have been used synonymously.

Cruickshank (1977-a) argues that the acceptance of this new label has created only an illusion of conceptual concordance:

The use of a new term does not mean that clarity of the problem has been achieved. Rather, greater confusion has often been the result (p. 2).

The literature continues to stress different etiologies and remedial methodologies. Among these are: (1) the visual-perceptual model (Frostig and Horne, 1964), (2) the perceptual-motor model (Kephart, 1971), (3) the neurological development model (Delacato, 1963), (4) the linguistic approach (Kirk and Kirk, 1971; Rapin, 1977), and (5) the food allergy hypothesis (Feingold, 1975 and 1976).

In a review of the literature, Mercer, Forgnone, and Wolking (1976) unearthed manifold definitions. Greenlee and Hare (1978) recently offered the editorial comment: "Professionals find it difficult at present to agree upon a single definition" (p. 346). The plurality of meanings associated with learning disabilities has triggered heated debate. Kass (1977) has even suggested that the best solution would be to abandon the term! Others have moved away from the restrictively defined theoretical and etiological components in an attempt to operationalize the definition (Chalfant and King, 1976). It is in this spirit that Cruickshank (1977-a) defends the concept:

This term connotes quite fully a type of problem, a constellation of characteristics, an aspect of child growth and disability which immediately makes possible a meeting of the minds among professionals. As such the term is serviceable and functional (p. 5).

The constellation of characteristics associated with learning disabilities is listed, in order of frequency, by several authors (McCarthy and McCarthy, 1968; Ross, 1976; Smith and Neisworth, 1975):

1. hyperactivity
2. perceptual-motor impairments
3. emotional lability
4. gross- and/or fine-motor deficits
5. disorders of attention
6. impulsivity
7. memory and thought processing disorders
8. specific academic deficits
9. speech and hearing disorders
10. EEG irregularities and other equivocal neurological signs

The learning disabled child may exhibit one or more of these characteristics. The presence of these conditions alone, however, does not determine the existence of disability.

Gearheart (1976) describes one widely held indicator of learning disabilities:

The one characteristic on which all authorities seem to agree is a significant educational discrepancy between expected academic performance and actual academic performance with no relationship to a sensory impairment (p. 9).

Another accepted feature of the learning disabled child is the presence of pronounced variability among skills and behaviors (Vance, 1977). A third component of most recognized definitions is a set of exclusion factors; this component stresses the concept that not all children who experience difficulties learning are learning disabled. Such is the case for those children whose educational difficulties are "secondary" to such factors as: (1) mental retardation, (2) various physical impairments, (3) emotional disturbance, and (4) cultural disadvantage (Ross, 1976, p. 187).

The most widely dissipated definition of learning disabilities is that provided in Part B of the Education of the Handicapped Act (Department of HEW, 1977):

"Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or of environmental, cultural, or economic disadvantage (p. 42478).

This functional definition, although widely utilized, has been criticized by authors such as Sulzbacher and Kenowitz (1977) for its ambiguity, and its failure to support a prescribed theoretical perspective:

These proposed rules and regulations seem to do what they were intended to: set numerical parameters around the population to be served (and funded) under PL 94-142. It should simplify the administration of special education but, unfortunately, will probably not help us better understand or define the nature of learning disabilities (p. 69).

Most funding guidelines specify that the learning disabled child must present measured general cognitive abilities at least within the Low Average range (i.e., Stanford-Binet or Wechsler IQ scores of 80 or 85 are often used as the cutting point). Otherwise, the child's academic difficulties are assumed to be secondary to generalized mental deficiency. This facet of the formal definition, the arbitrary IQ cutoff, has, perhaps, been the most roundly criticized (Cruickshank, 1977-b; Hallahan and Cruickshank, 1973; Kephart, 1968; Mercer, 1975). Generally, however, the trend towards functional definitions has been well-received.

In sum, early definitions of learning disabilities tended to be highly restrictive. Of necessity, the recent trend toward functional definitions has resulted in increased etiological and theoretical ambiguity. Basic empirical research is needed before we can adequately define (or understand) the learning disabled child. This serious professional dilemma has been cogently expressed by George Senf (1977);

If we cannot define those children who represent the kernel of our concern, then we shall never generate an informational base concerning their problems (p. 539).

The present research constitutes an initial step in the process of empirically identifying the characteristics of learning disabled children. More specifically, this research elucidates several important phenomenological dimensions of the self-experience of learning disabled children.

CHAPTER II

REVIEW OF RELATED LITERATURE

Systematic research in the area of learning disabilities has focused primarily on issues such as academic performance, task orientation, the development of visual-motor-graphic skills, and the like. Several authorities have advocated that, in addition to professional intervention in the areas of academic deficit, learning disabled children need assistance in the development of self-concept and social skills:

A well-conceived program for learning disabled children will include some form of continued psychotherapy (Cruickshank, 1977, p. 279).

The school psychologist should take an active role in the social and emotional development of learning disabled students (Ledebur, 1977, p. 62).

There is much armchair opinion and little experimental data on the interpersonal characteristics of learning disabled children. The relevant literature may be separated into three rather discrete categories: (1) that which addresses the debilitating effects of school failure on self concept, (2) that which concerns stereotyping and self-fulfilling prophecy as a result of labeling, and (3) that which investigates the relationship between social comparison and peer rejection.

I. SCHOOL FAILURE AND SELF CONCEPT

William Glasser (1969 and 1972) has written extensively on the problems of children who experience school failure. He warns that the

failure experience often contributes to a negative identity with life-long consequences. Calhoun and Morse (1977) provide a definition:

Self-concept refers to how an individual perceives himself in terms of ability, value, worth, limitations, etc. The self-concept is the substantive description one employs to identify his nature, and is also used by individuals to compare themselves to others (p. 319).

The principle that school failure creates negative self-concept has often been articulated in discussions of the learning disabled child (Decker and Decker, 1975; Rowan, 1977; Trehub, 1977). Decker and Decker's comments are exemplary:

While the learning-disabled child may present difficulties in the intellectual, conceptual, perceptual-motor, and speech and language areas to be sure, because of frustration and failures he has experienced, he frequently develops an emotional overlay to his learning deficit. He begins to take on a concept of himself as "a person who cannot," an inadequate and sometimes worthless individual (p. 354).

Several studies have investigated the relationship between academic performance, self concept, and other factors (Bledsoe, 1967; Fretz and Engle, 1973; Primavera, 1974; Spencer, 1977). The findings have been equivocal. Rubin, Dorle, and Sandridge (1977) concluded from their study that self-esteem and school achievement were moderately related.

II. STEREOTYPING AND SELF-FULFILLING PROPHECY

Labeling is thought to set the stage for social-stereotyping and for self-fulfilling prophecy (primarily via altered teacher expectations). Erving Goffman in 1963 integrated earlier work on the stigmatizing effects of labeling into a comprehensive theoretical treatise. Since

that time, investigations of labeling-effects have been prolific (Pollack, Huntly, Allen, and Swartz, 1976). Many psychologists, special educators, and neurologists have accepted the presumption that the learning disabled child suffers from the labeling process (Paul, Turnbull, and Cruickshank, 1977; Schain, 1977). Regretably, as Algozzine and Southerland (1977) note: "few experimental research studies have evaluated the effects of the label 'learning disabled'" (p. 293).

Self-fulfilling prophecy occurs when teacher prediction acts as a cause of student behavior (Larsen and Ehly, 1978). Experimenter biases were first studied in the classroom by Rosenthal and Jacobson (1968) in their now-classic 1964 investigation. Foster, Schmidt, and Sabatino (1976) found considerable discrepancies between teacher expectations for learning disabled and non-exceptional children; they did not determine the effects--if any--of these differential expectations. Snyder, Berscheid, and Tanke (1977) conducted a study verifying the self-fulfilling nature of social stereotypes. They found that labeling, in addition to affecting the information processing of the perceiver, substantially altered the behavior of the target (who was unaware of the arbitrarily-applied label).

III. SOCIAL COMPARISON AND PEER REJECTION

The sociometric technique has been used to verify peer rejection. In 1950, Orville Johnson measured the peer choice status of mentally-handicapped children in the regular classroom. He found these children

to be less accepted than were children of average intelligence. An abundance of similar investigations yielding similar findings led Dentler and Mackler (1962) to declare a moratorium on studies of the relationship between intelligence and sociometric status among children. Bryan (1974) found that learning disabled children--particularly if they were white or female--tended to be rejected by their peers. Bryan (1976) replicated this study a year later with 25 of his original learning disabled children; he concluded that rejection ratings were reliable across time and classrooms. Likewise, Sipperstein, Bopp, and Bak (1978) found that learning disabled children were significantly less popular than were their non-exceptional peers (i.e., none of the learning disabled children participating in their study received "star" ratings by more than one-half of their classmates).

Several authors have recently utilized Festinger's (1954) Social Comparison Theory to account for diminished peer status and self-concept measures among learning disabled children (Smith, Doeckei, and Davis, 1977; Rogers, Smith, and Coleman, 1978). It is inferred from Festinger's model that learning disabled children's relationships with significant others in the interpersonal environment tends to adversely affect their estimations of self-worth.

If the interpersonal environment is a powerful determinant of development, and, if peer group relations are a significant facet of that environment, the self-concept and peer status literature supports the notion that the developmental experiences and outcomes of learning disabled children differ substantially from those of their non-exceptional peers.

CHAPTER III

DESIGN AND METHODOLOGY

The project was divided into two phases. The aim of Phase I was to elicit descriptors (i.e., bipolar constructs) from a small sample of learning disabled and non-exceptional children. These descriptors were utilized in the development of a standardized instrument, an adaptation of Kelly's (1955) repertory grid, which was administered to a larger sample of youngsters in Phase II.

I. DESCRIPTION OF PARTICIPANTS

Participants were male youngsters aged ten to twelve years who were enrolled in the fifth or sixth grades in one of nine elementary schools in southeastern Tennessee. These demographic parameters (i.e., age, grade, and sex) were utilized to reduce potential within-group variability which might have resulted from sexual and developmental differences. Prior to data collection, one-half of the participants had been independently certified as learning disabled and had received part-time resource programming for varying lengths of time. In all cases, certification was completed through the Southeast Tennessee Educational Cooperative, an agency operating under the auspices of Team Evaluation Center, Inc., of Chattanooga, Tennessee. Therefore, the assessment procedures and diagnostic criteria were uniform across schools. The author

acknowledges that some authorities might disagree with the practice of utilizing the legal definition of learning disabilities (i.e., that provided by PL 94-142) as a basis for research. However, this seems to be the most logical and practical approach to a problem which is inherent in the field (Kebler, 1977).

Letters requesting parental consent for participation in the study (see Appendix B) were sent home from the nine schools with each learning disabled male youngster in the fifth and sixth grades. Consent forms were also sent home from each of the nine schools with an equal number of non-exceptional fifth and sixth grade males.¹ School agents charged with the responsibility of selecting the non-exceptional sample were instructed:

Avoid choosing those students who are the most well-adjusted or the least well-adjusted. Attempt to select students who have achieved an average, or typical, adjustment to school considering both their academic and social-behavioral skills.

Informed consent was thus procured for 78 youngsters, over 95 percent of those from whom participation was solicited: 6 learning disabled and 6 non-exceptional students participated in Phase I, while 33 learning disabled and 33 non-exceptional students participated in Phase II.

II. METHODS OF PROCEDURE

Phase I

The youngsters involved in this aspect of the study participated in individual, 30-minute, structured interviews with the researcher.

¹Procedures for the selection of the non-exceptional participants were based, in part, on the policies and prerogatives of the cooperating educational agencies so as to minimally disrupt the educational functions and processes of the agencies and children involved.

Initially, efforts were made to establish rapport and to explain the experimental nature of the activity (i.e., that responses would be confidential and would not affect grades). In addition, each student was informed of his prerogative to terminate the interview with no ill consequences at any time. Constructs were then elicited utilizing the triadic sort method proposed by Kelly (1955). The apparatus required for the triadic sort technique was a set of ten, 3 x 4 inch, index cards, each inscribed with one of the following stereotypic role titles:

1. self
2. mother
3. father
4. brother or sister
5. "A" student
6. ex-friend
7. best friend
8. favorite teacher
9. student in part-time resource
10. least favorite teacher

The cards were sequentially presented and the youngster was asked to name one person who best fit the stereotypic role written on each card. The names of those persons were written on the corresponding cards.

Next, the deck was shuffled and three of the cards were placed on a table in front of the student. He was asked to indicate, in a word or a short phrase, the way in which two of the people (whose names appeared on the three cards) were alike and different from the third. Responses were recorded by the researcher. The cards were then re-shuffled and another set of three was placed before the student, etc., until the 30-minute time period had expired.

The researcher selected ten constructs from those yielded via the triadic sort method for inclusion in the repertory grid:

1. quiet - loud
2. nice - mean
3. outgoing - shy
4. many friends - few friends
5. like-dislike
6. attractive - plain
7. smart - dull
8. happy - sad
9. admire - pity
10. strong - weak

The pool of descriptors from which these ten constructs were selected is extensive (see Appendix C). The choice of constructs to be included in the repertory grid was not statistically determined; selection criteria included researcher interest and curiosity in addition to frequency and ease of use by the Phase I participants.

Phase II

The adaptation of Kelly's (1955) repertory grid which was utilized for Phase II data collection is provided in Appendix D. The grid is a two-way table with a column for each of the ten stereotypic roles which were utilized in the Phase I triadic sort, and a row for each of the ten selected bipolar constructs. The entry (a ranking of one to five) in any given cell shows how the bipolar construct associated with that row applies to the stereotypic role associated with that column.

Standardized instructions for the repertory grid procedure were presented via a videotape medium (see Appendix E) as a means of controlling effects potentially yielded by instructional variation. Through the

videotape medium, the researcher explained that the participant was to write his name in the space to the left of the word "self" and to continue to write names for the remaining role titles. The instructions further informed that no one person should be named more than once. The bipolar constructs were introduced and the five-point ranking scale was explained. Finally, an example construct, one not actually included in the grid, was ranked to model the procedure.

The instructional videotape was presented and data were collected during eight group sessions. The number of participants present per session ranged from two to six. Participants were seated several feet apart in the school library (or comparable facility) where they viewed the videotape and completed the repertory grids. The researcher answered individual questions, requests for clarification, and the like, but attempted to minimize this type of interaction with the participants. The researcher collected the completed grids after checking to assure that each cell contained a ranking. The Phase II procedure required approximately 40 minutes per group.

CHAPTER IV

ANALYSIS OF RESULTS

The selection of statistical procedures required careful deliberation. As noted by Bannister (1966):

Repertory grid testing has already been developed in a variety of ways using different statistical modes of analysis to make sense of the way in which a person sorts the elements with which he is faced (pp. 373-374).

The method chosen was that of discriminant analysis, a relatively simple and straightforward technique for statistically distinguishing differences in the construct rankings of two groups. Nie, Hull, Jenkins, Steinbrenner, and Bent (1975) succinctly explain the analytical tack assumed by this approach:

The mathematical objective of discriminate analysis is to weight and linearly combine the discriminating variables in some fashion so that the groups are forced to be as statistically distinct as possible. In other words, we want to be able to "discriminate" between the groups in the sense of being able to tell them apart (p. 435).

Discriminate analysis is mathematically akin to multiple regression in that it generates a simple linear scoring rule; however, rather than explaining variance of the dependent variable as is done in multiple regression, the scoring rule is used to assign all of the participants to one of two mutually exclusive categories. One limitation posed by discriminate analysis is that slight upward biases can occur in the re-classification of cases; unfortunately, there is no simple analytical

technique which will adjust or compensate for such possible bias. To distinguish between the learning disabled and non-exceptional groups the researcher utilized rankings on the ten selected bipolar constructs as measures of perceptual characteristics on which the groups were expected to differ.

I. DIRECT DISCRIMINATE ANALYSIS

Discriminate analyses were independently conducted on each of the five stereotypic roles selected for scrutiny during the present investigation: (1) "self," (2) "student in part-time resource," (3) "academically successful student," (4) "favorite teacher," and (5) "least favorite teacher." Initially, the rankings for all of the ten bipolar constructs, the independent variables, were entered concurrently into each analysis irrespective of their discriminating power.

The findings (presented in Table 4.1) lend an emphatically affirmative answer to the general inquiry pursued by the present investigation; the construing patterns of learning disabled children differ significantly from those of their non-exceptional peers. Specifically, these data reveal marked differences between the two groups in their constructions of "self," and in their constructions of "student in part-time resource" (i.e., in their construction of learning disabled students). Only very equivocal differences were manifested in their constructions of "academically successful student," in their constructions of "favorite teacher," and in their constructions of "least favorite teacher."

Table 4.1. Results of direct discriminant analysis.

Stereotypic Role	Eigenvalue	Canonical Correlation	Wilks' Lamba	Chi Square	DF	Significance
Self	0.59865	0.612	0.6255	27.680	10	0.002
Student in P-T Resource	1.73026	0.796	0.3663	59.259	10	0.000
"A" Student	0.18791	0.398	0.8418	10.160	10	0.427
Favorite Teacher	0.14322	0.354	0.8747	7.897	10	0.639
Least Favorite Teacher	0.21837	0.423	0.8208	11.653	10	0.309

To the extent that these constructs provide a basis for satisfactory discrimination between children known to belong to either the learning disabled or the non-exceptional groups, they might yield satisfactory discriminations for children whose group membership is unknown. To check the adequacy of the discriminate function, it was possible to re-classify the original set of cases, thereby determining the number, or percentage, of those cases which could be correctly sorted utilizing rankings on the ten bipolar constructs. Rankings for the "self" role yielded correct re-classifications for over 75 percent of the cases (see Table 4.2). Using the rankings for "student in part-time resource," over 90 percent of the cases were correctly re-classified (see Table 4.3). Re-classification based on the "academically successful student" ratings was approximately 69 percent successful (see Table 4.4). Rankings on the "favorite teacher" role yielded a re-classification success rate of about 65 percent (see Table 4.5). Finally, approximately 65 percent were correctly re-classified using the rankings for the "least favorite teacher" role (see Table 4.6).

II. STEPWISE DISCRIMINATE ANALYSIS

On the assumption that satisfactory discrimination for the "self" and "student in part-time resource" roles might not require utilizing the full complement of independent variables, stepwise discriminate analyses were independently applied to the ranked construct data given in response to these two roles (see Table 4.7). The stepwise procedure

Table 4.2. Re-classified cases based on construct rankings for the "self" role.

Group	Actual Cases	Re-classified		Percent Correct
		LD	NE	
LD*	33	24	9	72.7
NE*	33	7	26	78.8
Total	66	31	35	75.76

*LD = learning disabled; NE = non-exceptional.

Table 4.3. Re-classified cases based on construct rankings for the "student in part-time resource."

Group	Actual Cases	Re-classified		Percent Correct
		LD	NE	
LD*	33	30	3	90.9
NE*	33	3	30	90.9
Total	66	33	33	90.91

*LD = learning disabled; NE = non-exceptional.

Table 4.4. Re-classified cases based on construct rankings for the "academically successful student" role.

Group	Actual Cases	Re-classified		Percent Correct
		LD	NE	
LD*	33	21	12	63.6
NE*	33	8	25	75.8
Total	66	29	37	69.70

*LD = learning disabled; NE = non-exceptional.

Table 4.5. Re-classified cases based on construct rankings for the "favorite teacher" role.

Group	Actual Cases	Re-classified		Percent Correct
		LD	NE	
LD*	33	21	12	63.6
NE*	33	11	22	66.7
Total	66	32	32	65.15

*LD = learning disabled; NE = non-exceptional.

Table 4.6. Re-classified cases based on construct rankings for the "least favorite teacher" role.

Group	Actual Cases	Re-classified		Percent Correct
		LD	NE	
LD*	33	20	13	60.6
NE*	33	10	23	69.7
Total	66	30	33	65.15

*LD = learning disabled; NE = non-exceptional.

Table 4.7. Results of stepwise discriminate analysis.

Stereotypic Role	Eigenvalue	Canonical Correlation	Wilks' Lamba	Chi Square	DF	Significance
Self	0.56092	0.599	0.6406	27.607	4	0.000
Student in P-T Resource	1.68382	0.792	0.3726	60.222	2	0.000

first selects the single best-discriminating variable. The variable best able to improve the discrimination is added to the first variable, etc., until the added variable makes only a negligible contribution to the power of the discrimination. Thus, the stepwise procedure selects an optimal set of variables to be used in discriminating group membership.

Stepwise solution for the "self" rankings utilized four of the ten constructs: (1) quiet-loud, (2) nice-mean, (3) smart-dull, and (4) admire-pity. Re-classification of cases using the four-variable equation was over 78 percent successful (see Table 4.8).

Six of the available constructs were utilized in the stepwise solution for the "student in part-time resource" role: (1) quiet-loud, (2) nice-mean, (3) outgoing-shy, (4) like-dislike, (5) smart-dull, and (6) happy-sad. Re-classification using these six variables was over 92 percent successful (see Table 4.9).

III. FREQUENCY DATA

Frequency tables showing the exact differences between the rankings of the learning disabled and non-exceptional groups for the "self" and "student in part-time resource" roles are provided in Appendix F.

Scrutiny of frequency data for the "self" role reveals the following trends:

1. Non-exceptional students are more likely to describe themselves as being somewhat or very loud than are learning disabled

Table 4.8. Re-classification of cases based on stepwise solution for the "self" role.

Group	Actual Cases	Re-classified		Percent Correct
		LD	NE	
LD*	33	25	8	75.8
NE*	33	6	27	81.8
Total	66	31	35	78.79

*LD = learning disabled; NE = non-exceptional.

Table 4.9. Re-classification of cases based on stepwise solution for the "student in part-time resource" role.

Group	Actual Cases	Re-classified		Percent Correct
		LD	NE	
LD*	33	30	3	90.9
NE*	33	2	31	93.9
Total	66	32	34	92.42

*LD = learning disabled; NE = non-exceptional.

students (15/33 or 45 percent versus 5/33 or 15 percent as is indicated in Table F.1).

2. Learning disabled students are more likely to describe themselves as being somewhat or very mean than are non-exceptional students (9/33 or 27 percent versus 4/33 or 12 percent as is indicated in Table F.3).

3. Non-exceptional students are more likely to state that they like themselves somewhat or very much than are learning disabled students (31/33 or 93 percent versus 26/33 or 78 percent as is indicated in Table F.9).

4. Learning disabled students are more likely to rate themselves as being somewhat or very attractive than are non-exceptional students (10/33 or 30 percent versus 4/33 or 12 percent as is indicated in Table F.12).

5. Non-exceptional students are more likely to rate themselves as being somewhat or very plain than are learning disabled students (25/33 or 76 percent versus 11/33 or 33 percent as is indicated in Table F.12).

6. Non-exceptional students are more likely to rate themselves as being somewhat or very smart than are learning disabled students (26/33 or 79 percent versus 10/33 or 30 percent as is indicated in Table F.13).

7. Learning disabled students are more likely to rate themselves as being somewhat or very dull than are non-exceptional students (12/33 or 36 percent versus 1/33 or 3 percent as is indicated in Table F.13).

8. Learning disabled students are more likely to rate themselves as being somewhat or very happy than are non-exceptional students (24/33 or 73 percent versus 17/33 or 52 percent as is indicated in Table F.16).

9. Learning disabled students are more likely to rate themselves as being very strong than are non-exceptional students (14/33 or 42 percent versus 7/33 or 21 percent as is indicated in Table F.19).

Investigation of frequency data for the "student in part-time resource" role reveals the following trends in the way learning disabled and non-exceptional students construe their learning disabled peers:

1. Learning disabled students are more likely to depict their learning disabled peers as being somewhat or very loud than are non-exceptional students (11/33 or 33 percent versus 7/33 or 21 percent as is indicated in Table F.2).

2. Non-exceptional students are more likely to rate their learning disabled peers as being somewhat or very quiet than are learning disabled students (20/33 or 61 percent versus 8/33 or 24 percent as is indicated in Table F.2).

3. Learning disabled students are more likely to state that they like their learning disabled peers somewhat or very much than are non-exceptional students (24/33 or 73 percent versus 5/33 or 15 percent as is indicated in Table F.10).

4. Non-exceptional students are more likely to state that they dislike their learning disabled peers somewhat or very much than are learning disabled students (22/33 or 67 percent versus 1/33 or 3 percent as is indicated in Table F.10).

5. Learning disabled students are more likely to rate their learning disabled peers as being somewhat or very attractive than are non-exceptional students (10/33 or 30 percent versus 4/33 or 12 percent as is indicated in Table F.12).

6. Non-exceptional students are more likely to rate their learning disabled peers as being somewhat or very plain than are learning disabled students (25/33 or 76 percent versus 11/33 or 33 percent as is indicated in Table F.12).

7. Learning disabled students are more likely to rate their learning disabled peers as being somewhat or very smart than are non-exceptional students (17/33 or 52 percent versus 2/33 or 6 percent as is indicated in Table F.14).

8. Non-exceptional students are more likely to rate their learning disabled peers as being somewhat or very dull than are learning disabled students (26/33 or 79 percent versus 7/33 or 21 percent as is indicated in Table F.14).

9. Learning disabled students are more likely to rate their learning disabled peers as being somewhat or very happy than are non-exceptional students (24/33 or 73 percent versus 17/33 or 52 percent as is indicated in Table F.16).

10. Learning disabled students are more likely to state that they admire their learning disabled peers somewhat or very much than are non-exceptional students (16/33 or 49 percent versus 6/33 or 18 percent as is indicated in Table F.18).

11. Non-exceptional students are more likely to state that they pity their learning disabled peers somewhat or very much than are learning disabled students (21/33 or 64 percent versus 9/33 or 27 percent as is indicated in Table F.18).

CHAPTER V

DISCUSSION

I. SUMMARY OF FINDINGS

This empirical study sought to delineate perceptual elements which are commonly utilized in the personal construct systems of learning disabled children. The psychology of personal constructs, a phenomenological approach, holds that persons differ from one another in their constructions of the world. The model person implied by this theory is depicted by Kelly (1955) as a "scientist" in the sense that each person perpetually attempts to predict what will occur next by construing and reconstruing his or her universe. Thus, an individualized perceptual framework, the personal construct system, is theorized. This system is conceptualized as being made up of a hierarchy of bi-polar constructs, categorizing concepts which allow the individual to sort similarities and differences perceived in his or her environment. While all construct systems are "personal," groups of individuals may, in a broad sense, apply the same bi-polar constructs in congruous fashion.

The field of learning disabilities has been fraught with the problems and confusions characteristic of new areas of inquiry. While data are gradually accumulating on the behavioral, intellectual, and academic characteristics of these children, empirically-based knowledge of their perceptual experiences has been slow in coming. Literature

addressing the personal and social attributes of children who experience school difficulties provides diffuse support for the hypothesis that learning disabled children are likely to perceive themselves and others in the interpersonal environment differently than do their non-exceptional peers. The triadic sort and repertory grid techniques devised by Kelly (1955) were adapted and applied in order to test this central hypothesis.

Direct discriminate analyses conducted on the collected data revealed marked differences between the learning disabled and the non-exceptional groups in their rankings of the "self" and "student in part-time resource" roles (with significance levels of 0.002 and beyond 0.000, respectively). Differences in rankings for the "academically successful student," "favorite teacher," and "least favorite teacher" roles were equivocal. Re-classification of cases was over 75 percent successful using the "self" rankings, and was over 90 percent successful using the "student in part-time resource" rankings. Stepwise solution for these two roles yielded discriminate functions which were, respectively, 79 percent and 92 percent successful in the re-classification of cases.

Investigation of frequency data for the "self" role revealed that learning disabled students are more likely than are non-exceptional students to depict themselves as mean, attractive, dull, happy, and strong. On the other hand, non-exceptional students are more likely to portray themselves as loud, likeable, plain, and smart.

Analysis of frequency data for the "student in part-time resource" role indicated that learning disabled students are more likely than are

non-exceptional students to view their learning disabled peers as loud, likeable, attractive, smart, happy, and admirable. Non-exceptional students are more likely than are learning disabled students to depict their learning disabled peers as quiet, "dislikable," plain, dull, and pitiful.

II. INTERPRETATION OF FINDINGS

Differences and similarities in the personal construct systems of learning disabled and non-exceptional students have been clearly delineated. The generalizability of these findings to other groups, however, has not been clearly established.

Learning disabled and non-exceptional students differ significantly in their constructions of self. These data do not substantiate the casual assumption that learning disabled students, primarily due to experienced academic difficulties, present a generalized negative sense of self. Rather, it appears that learning disabled students defend against a generalized negative self identity by fragmenting and compartmentalizing their negative constructs of self.

To reiterate the previously summarized findings, learning disabled students are more prone to construe themselves as being dull and mean than are non-exceptional students, but they are also more likely than are non-exceptional students to rate themselves as attractive, happy, and strong. Since differences between the learning disabled and non-exceptional students along such dimensions as physical strength and

attractiveness are not readily observable, it appears that learning disabled students further compromise the relative intensity of negative self-concepts by reinforcing and bolstering positive constructs of self.

This tendency towards compartmentalization and selective bolstering suggests that learning disabled students are more prone to experience a sense of "ontological insecurity" (Laing, 1960). That is, the lack of a strongly integrated sense of self may contribute to increased anxieties and frustrations in dealing with life problems. This is a finding with obvious implications for educators, counselors, and psychologists in their work with learning disabled children.

A second key finding is that learning disabled and non-exceptional students differ significantly in their constructions of other learning disabled students. Learning disabled students are more likely to construe their learning disabled peers in a very positive light, while non-exceptional students are more prone to construe their learning disabled peers in a very negative light.

Kelly's (1950) commonality and sociality corollaries (see Appendix A) predict that persons who construe their life experiences similarly and who play mutual roles in ongoing social processes are more likely to identify with and appreciate each other. Due to similarities in their antecedent experiences, personal construct systems, and ongoing social processes, learning disabled students are more prone to view their learning disabled peers positively. The relative tendency of non-exceptional students to construe their learning disabled peers negatively can be explained by contrasts along these same dimensions.

Educators, counselors, and psychologists should attempt to modify non-exceptional students' negativistic perceptions of their learning disabled peers by altering social processes. This might include the direct discussion of values and attitudes utilizing a series of structured classroom group meetings (Glasser, 1969), or a classroom role-play format (Hawley, 1975). Another approach would be that of building involvement between non-exceptional and learning disabled students by facilitating interaction in non-academic activities. A less direct alternative would be that of providing non-exceptional students with educational reading materials (Schrack, 1977). Interventions geared to alter non-exceptional students' perceptions of their learning disabled peers should be monitored carefully so as to document the relative efficacy of various strategies.

Differences in the antecedent experiences, personal construct systems, and ongoing social processes of learning disabled and non-exceptional students should not be construed as being absolute or all-pervasive. Analysis of available data reveals that learning disabled and non-exceptional students have similar perceptions of "academically successful student," "favorite teacher," and "least favorite teacher." Future empirical research will delineate additional areas of similarity and contrast.

III. FUTURE RESEARCH

The need for basic empirical research in the field of learning disabilities has long been recognized. The present research is of major

import, not only because it has yielded highly significant findings, but because it constitutes that crucial first step. We have found our way to the theatre and have viewed an intriguing opening scene; additional mysteries and nuances will reveal themselves as a result of continued interest and observation. An ongoing program of empirical research is called for; considerations for future investigation include the following:

1. The stage is set for discriminate function analysis of the remaining rating data which were collected in Phase II. While the focus of the present investigation was the analysis of personal constructs in relation to the interpersonal environment of the school, data were also collected which will allow for the analysis of the utilization of personal constructs in relation to the familial environment (i.e., ratings were also obtained on the roles: "mother," "father," and "brother or sister").

2. Additional information might emerge from subjecting the rating data generated in Phase II to alternative forms of statistical analysis. One promising approach has been devised by Slater (1972 and 1973) under a grant from the British Medical Research Council. (The Grid Analysis Package is described in detail by Chetwynd in an unpublished and undated manuscript.)

3. Finally, the multitudinous perceptual constructs generated in Phase I should be utilized as a basis for continued exploratory study of the perceptual experiences of the population in question.

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APPENDICES

APPENDIX A

ASSUMPTIONS UNDERLYING PERSONAL CONSTRUCT THEORY

Fundamental Postulate

A person's processes are psychologically channelized by the ways in which he anticipates events.

Construction Corollary

A person anticipates events by construing their replications.

Individuality Corollary

Persons differ from each other in their constructions of events.

Organization Corollary

Each person characteristically evolves for his convenience in anticipating events, a construction system embracing ordinal relationships between constructs.

Dichotomy Corollary

A person's construction system is composed of a finite number of dichotomous constructs.

Choice Corollary

A person chooses for himself that alternative in a dichotomized construct through which he anticipates the greatest possibility for the elaboration of his system.

Range Corollary

A construct is convenient for the anticipation of a finite range of events only.

Experience Corollary

A person's construction system varies as he successively construes the replications of events.

Modulation Corollary

The variation in a person's construction system is limited by the permeability of the constructs within whose range of convenience the variants lie.

Fragmentation Corollary

A person may successively employ a variety of construction systems which are inferentially incompatible with each other.

Commonality Corollary

To the extent that one person employs a construction of experience which is similar to that employed by another, his processes are psychologically similar to those of the other person.

Sociality Corollary

To the extent that one person construes the construction process of another he may play a role in a social process involving the other person.

APPENDIX B

STATEMENT OF INFORMED CONSENT

April 1979

Dear Parent(s),

Your child was one of several students at school to be chosen to participate in an educational research study. The main goal of this project is to get a better idea of the way children think by identifying those concepts which different children use in describing themselves and others in their environment.

Participation will require being out of class for a period of about an hour in order to complete a concept rating form in the school library. The rating form will be confidential and your child's personally identifiable responses will not be shared with teachers or other school personnel.

Several school systems in East Tennessee are cooperating in this effort to develop a better understanding of school children for the purpose of improving our educational practices. I would appreciate your willingness to allow your child to participate. If you agree, please sign below and return this letter to the school.

You are free, however, to withhold or withdraw your consent for participation in this project without prejudice to your child. I will

be happy to address any further questions or comments you might have regarding this project.

Sincerely yours,

William A. Wray
Project Director

College of Education
The University of Tennessee
(Phone: 974-5131)

_____ has my permission to miss one hour
of class to complete the rating form mentioned above.

Parent's Signature

APPENDIX C

CONSTRUCTS YIELDED BY TRIADIC SORT

I. INCIDENTAL CONSTRUCTS

1. girls--boy
2. boys--girl
3. same family--not in family
4. teachers--not a teacher
5. go to school--does not go to school
6. same age--larger
7. old-young
8. adults--kid
9. ordinary names--odd name
10. same age--older
11. students--teacher
12. children--adult
13. boys--lady
14. blonde hair--brown hair
15. go to the same school--goes to a different school
16. same size shoes--big feet
17. have kids--is a kid
18. short--tall
19. same color hair--different color hair
20. same color eyes--different color eyes
21. skinny--fat
22. married--kid
23. neighbors--not a neighbor
24. drive cars--has a motorcycle
25. same grade--younger
26. live in the country--lives in the city
27. black hair--blonde
28. wear braces--doesn't wear braces
29. green eyes--brown eyes
30. student--not a student
31. know each other--doesn't know them
32. in same class--in a different class
33. brown hair--tan hair
34. like the mountains--likes to fish
35. look alike--looks different

II. SOCIALLY-RELEVANT CONSTRUCTS

1. friendly--mean
2. nice--hateful
3. have lots of friends--has few friends
4. use same reading book--uses a different reading book
5. has friends--left out
6. happy--sad
7. cute--ugly
8. nice--mean
9. healthy--sick
10. strong--weak
11. smart--not as smart
12. write alike--prints
13. clean--messy
14. like--hate
15. get mad--quiet
16. smart--dumb
17. handsome--ugly
18. look up to--feel sorry for
19. has a temper--nice
20. brave--scared
21. pretty--yucky
22. polite--rude
23. shy--bossy
24. active--likes to sleep
25. writes slouchy--writes well
26. careful--reckless
27. think of same things--out of it
28. friendly--bossy
29. get special help--doesn't get help
30. clean--dirty
31. like the teacher--doesn't like the teacher
32. in reading class--reads well
33. work hard--lazy
34. do good sometimes--does good all the time
35. friendly--bashful
36. quiet--yells
37. rude--not rude
38. nice--likes to fight
39. strong--puny
40. have to stay in the room--goes to another room

APPENDIX D

THE REPERTORY GRID

EXAMPLE										
TALL	SELF	MOTHER	FATHER	BROTHER OR SISTER	"A" STUDENT	EX-FRIEND	BEST FRIEND	FAVORITE TEACHER	STUDENT IN P-T RESOURCE	LEAST FAVORITE TEACHER
SHORT										
1 = VERY TALL										
2 = TALL										
3 = IN BETWEEN										
4 = SHORT										
5 = VERY SHORT										
1 2 3 4 5										
QUIET										
LOUD										
NICE										
MEAN										
OUTGOING										
SHY										
MANY FRIENDS										
FEW FRIENDS										
LIKE										
DISLIKE										
ATTRACTIVE										
PLAIN										
SMART										
DULL										
HAPPY										
SAD										
ADMIRE										
PITY										
STRONG										
WEAK										

APPENDIX E

SCRIPT FOR THE INSTRUCTIONAL VIDEOTAPE

Hello. My name is Bill Wray. I'm working on a research project; the purpose of this project is to arrive at a better understanding of fifth and sixth grade students. You have been asked to participate in this project. This means that I would like you to complete the rating sheet which has been placed on your desk. Although it looks complicated, you should have no difficulty with this sheet. However, you must listen, and carefully follow the directions. Your answers will be considered confidential; I will not allow teachers or other students to see your sheets. I want you to think carefully on each rating. It is important that you attempt to be honest and open. Now, let's look at the rating sheet.

Turn your sheet like this one so that the words Self, Mother, Father, and so forth run from top to bottom on the right side of the sheet. Write your first name here, in the empty space to the left of the word Self. In the empty space by Mother, write the first name of your mother. In the empty space by Father, write your father's first name. Next, beside the category Brother or Sister, write the name of one of your brothers or sisters. Write the name of only one. If you do not have a brother or sister, write the name of another family member, such as that of a cousin. Beside the category labeled "A" Student, write the first name of someone who makes very good grades in school. Beside the Ex-Friend heading, write the name of a person who was once your friend; this can be a person who attends your school or lives in your neighborhood, or it might be a person who has moved to another city or town. Write the name of your best friend here. Now, think of the many teachers you have had in the past years. Of these, write the name of your most favorite teacher, the one you liked best, in this space. Write the name of someone who receives part-time resource help, here. This is a person who sometimes leaves the regular classroom and gets special help in reading or math from another teacher. Finally, I want you to write the name of your least favorite teacher, the teacher you liked least, in this space. Now, check to make sure that no person is listed more than one time. For example, if you wrote the same person's name beside the Ex-Friend and the "A" Student categories, you should think of the name of another person to write in one of these spaces. When each of these spaces has a name, and no person's name is listed more than once, place your pencil on your desk to signal that you are ready to begin.

Now, turn your sheet like this, so that the names are written across the top. On the left of the sheet are ten boxes. Written in each box, are pairs of words which are frequently used in describing

people. You will use these words to describe the ten people whose names you have just written across the top of your sheet. First, let's look at the ten pairs of words. I'll read these for you. The first one is Quiet or Loud. Number two is Nice or Mean. Number three is Outgoing (which means "friendly") or Shy. Number four is Many Friends or Few Friends. The next one is Like or Dislike. This one is Attractive or Plain (which means "not so pretty"). Listed in the next box are the words Smart or Dull; a dull person is one who is not very smart. Here, are the words Happy or Sad. Next, we have Admire or Pity. A person whom you admire is one you look up to; a person whom you pity is one you feel sorry for. The next descriptive words are Strong or Weak.

In the upper left corner is an example to show you how to use the rating system. The words in the example box are Tall or Short. Notice that these words are written just like the words which you will be using. Some people are tall. Other people are short. Still others are in-between. They would be here, because they are neither tall nor short. If a person was very tall, you would give that person a rating of 1. If a person was tall, you would rate him or her as a 2. If a person was in-between, you would rate him or her as a 3. A short person would be rated as a 4, and a very short person would receive a rating of 5.

Now let's look at the first box which is Quiet or Loud. The 1 is on this side which stands for very quiet, and the 5 is on this side which stands for very loud. A quiet person would be rated as a 2, an in-between person would be rated as a 3, and a loud person would be rated as a 4. Now let's make our first rating. Here is the box with your name in it. Do you consider yourself to be a very quiet person (a 1), a quiet person (a 2), an in-between person (a 3), a loud person (a 4), or a very loud person (a 5)? Write the number which you decided upon in this box. If you rated yourself as a 3, write a 3 in this box. If you rated yourself as a 2, write a 2 in this box, and so forth.

Next, let's look at the box which contains your mother's name. How would you rate your mother? Select one number as a rating for your mother and write that number in this box. Next is your father's name. Rate your father as a very quiet (a 1), a quiet (a 2), an in-between (a 3), a loud (a 4), or as a very loud (a 5) person. Place your father's rating in this box. Go on across the page and rate each person as being either Quiet or Loud using our one to five rating system. When you have completed this line, go on to the next line, and, in the same way, rate yourself as being very nice, nice, in-between, mean, or very mean. You would write this rating here, in the first box under your name. Then you would rate your mother, your father, your brother or sister, and the other people whose names are written on the top of your rating sheet. Work on each one of these in the same way until each box has a rating. Place your pencil on your desk to signal that you have completed the rating sheet.

APPENDIX F

TABLES

Table F.1. Quiet-loud rankings on the "self" role.

Group	Ranks					Row Total
	1	2	3	4	5	
LD*	Count	4	24	2	3	33
	Row %	12.1	72.7	6.1	9.1	50.0
	Col. %	80.0	58.5	12.5	75.0	
	Total %	6.1	36.4	3.0	4.5	
NE*	Count	1	17	14	1	33
	Row %	3.0	51.5	42.4	3.0	50.0
	Col. %	20.0	41.5	87.5	25.0	
	Total %	1.5	25.8	21.2	1.5	
Col. Total	Count	5	41	16	5	66
	%	7.6	62.1	24.2	6.1	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 12.99512 with 3 df; significance = 0.0047).

Table F.2. Quiet-loud rankings on the "student in part-time resource" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	3	8	14	3	5	33
	Row %	9.1	24.2	42.4	9.1	15.2	50.0
	Col. %	50.0	66.7	70.0	18.8	41.7	
	Total %	4.5	12.1	21.2	4.5	7.6	
NE*	Count	3	4	6	13	7	33
	Row %	9.1	12.1	18.2	39.4	21.2	50.0
	Col. %	50.0	33.3	30.0	81.3	58.3	
	Total %	4.5	6.1	9.1	19.7	10.6	
Col. Total	Count	6	12	20	16	12	66
	%	9.1	18.2	30.3	24.2	18.2	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 11.11667 with 4 df; significance = 0.0253)

Table F.3. Nice-mean rankings on the "self" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	8	6	10	6	3	33
	Row %	24.2	18.2	30.3	18.2	9.1	50.0
	Col. %	80.0	30.0	43.5	60.0	100.0	
	Total %	12.1	9.1	15.2	9.1	4.5	
NE*	Count	2	14	13	4		33
	Row %	6.1	42.4	39.4	12.1		50.0
	Col. %	20.0	70.0	56.5	40.0		
	Total %	3.0	21.2	19.7	6.1		
Col. Total	Count	10	20	23	10	3	66
	%	15.2	30.3	34.8	15.2	4.5	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 10.59130 with 4 df; significance = 0.0316)

Table F.4. Nice-mean rankings on the "student in part-time resource" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	5	7	9	6	6	33
	Row %	15.2	21.2	27.3	18.2	18.2	50.0
	Col. %	55.6	53.8	45.0	42.9	60.0	
	Total %	7.6	10.6	13.6	9.1	9.1	
NE*	Count	4	6	11	8	4	33
	Row %	12.1	18.2	33.3	24.2	12.1	50.0
	Col. %	44.4	46.2	55.0	57.1	40.0	
	Total %	6.1	9.1	16.7	12.1	6.1	
Col. Total	Count	9	13	20	14	10	66
	%	13.6	19.7	30.3	21.2	15.2	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 1.07375 with 4 df; significance = 0.8984)

Table F.5. Outgoing-shy rankings on the "self" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	13	6	9	3	2	33
	Row %	39.4	18.2	27.3	9.1	6.1	50.0
	Col. %	54.2	37.5	60.0	37.5	66.7	
	Total %	19.7	9.1	13.6	4.5	3.0	
NE*	Count	11	10	6	5	1	33
	Row %	33.3	30.3	18.2	15.2	3.0	50.0
	Col. %	45.8	62.5	40.0	62.5	33.3	
	Total %	16.7	15.2	9.1	7.6	1.5	
Col. Total	Count %	24 36.4	16 24.2	15 22.7	8 12.1	3 4.5	66 100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 2.60000 with 4 df; significance = 0.6268)

Table F.6. Outgoing-shy rankings on the "student in part-time resource" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	8	5	13	2	5	33
	Row %	24.2	15.2	39.4	6.1	15.2	50.0
	Col. %	53.3	35.7	65.0	22.2	62.5	
	Total %	12.1	7.6	19.7	3.0	7.6	
NE*	Count	7	9	7	7	3	33
	Row %	21.2	27.3	21.2	21.2	9.1	50.0
	Col. %	46.7	64.3	35.0	77.8	37.5	
	Total %	10.6	13.6	10.6	10.6	4.5	
Col. Total	Count	15	14	20		8	66
	%	22.7	21.2	30.3		12.1	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 6.28730 with 4 df; significance = 0.1787)

Table F.7. Many friends-few friends rankings on the "self" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	17	5	6	1	4	33
	Row %	51.5	15.2	18.2	3.0	12.1	50.0
	Col. %	45.9	50.0	66.7	25.0	66.7	
	Total %	25.8	7.6	9.1	1.5	6.1	
NE*	Count	20	5	3	3	2	33
	Row %	60.6	15.2	9.1	9.1	6.1	50.0
	Col. %	54.1	50.0	33.3	75.0	33.3	
	Total %	30.3	7.6	4.5	4.5	3.0	
Col. Total	Count %	37 56.1	10 15.2	9 13.6	4 6.1	6 9.1	66 100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 2.90991 with 4 df; significance = 0.5730)

Table F.8. Many friends-few friends rankings on the "student in part-time resource" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	9	7	10	4	3	33
	Row %	27.3	21.2	30.3	12.1	9.1	50.0
	Col. %	56.3	41.2	71.4	36.4	37.5	
	Total %	13.6	10.6	15.2	6.1	4.5	
NE*	Count	7	10	4	7	5	33
	Row %	21.2	30.3	12.1	21.2	15.2	50.0
	Col. %	43.8	58.8	28.6	63.6	62.5	
	Total %	10.6	15.2	6.1	10.6	7.6	
Col. Total	Count	16	17	14	11	8	66
	%	24.2	25.8	21.2	16.7	12.1	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 4.66902 with 4 df; significance = 0.3230)

Table F.9. Like-dislike rankings on the "self" role.

Group	Ranks					Row Total
	1	2	3	4	5	
LD*	Count	24	2	5	2	33
	Row %	72.7	6.1	15.2	6.1	50.0
	Col. %	54.5	15.4	71.4	100.0	
	Total %	36.4	3.0	7.6	3.0	
NE*	Count	20	11	2		33
	Row %	60.6	33.3	6.1		50.0
	Col. %	45.5	84.6	28.6		
	Total %	30.3	16.7	3.0		
Col. Total	Count	44	13	7	2	66
	%	66.7	19.7	10.6	3.0	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 9.88012 with 3 df; significance = 0.0196)

Table F.10. Like-dislike rankings on the "student in part-time resource" role.

Group	Ranks					Row Total
	1	2	3	4	5	
LD*	Count	22	2	8		33
	Row %	66.7	6.1	24.2		50.0
	Col. %	95.7	33.3	57.1		20.0
	Total %	33.3	3.0	12.1		1.5
NE*	Count	1	4	6	18	33
	Row %	3.0	12.1	18.2	54.5	50.0
	Col. %	4.3	66.7	42.9	100.0	80.0
	Total %	1.5	6.1	9.1	27.3	6.1
Col. Total	Count	23	6	14	18	66
	%	34.8	9.1	21.2	27.3	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 39.92629 with 4 df; significance = 0.0000)

Table F.11. Attractive-plain rankings on the "self" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	9	4	13	3	4	33
	Row %	27.3	12.1	39.4	9.1	12.1	50.0
	Col. %	56.3	33.3	54.2	37.5	66.7	
	Total %	13.6	6.1	19.7	4.5	6.1	
NE*	Count	7	8	11	5	2	33
	Row %	21.2	24.2	33.3	15.2	6.1	50.0
	Col. %	43.8	66.7	45.8	62.5	33.3	
	Total %	10.6	12.1	16.7	7.6	3.0	
Col. Total	Count %	16 24.2	12 18.2	24 36.4	8 12.1	6 9.1	66 100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 2.91667 with 4 df; significance = 0.5719)

Table F.12. Attractive-plain rankings on the "student in part-time resource" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	5	5	12	3	8	33
	Row %	15.2	15.2	36.4	9.1	24.2	50.0
	Col. %	83.3	62.5	75.0	15.8	47.1	
	Total %	7.6	7.6	18.2	4.5	12.1	
NE*	Count	1	3	4	16	9	33
	Row %	3.0	9.1	12.1	48.5	27.3	50.0
	Col. %	16.7	37.5	25.0	84.2	52.9	
	Total %	1.5	4.5	6.1	24.2	13.6	
Col. Total	Count	6	8	16	19	17	66
	%	9.1	12.1	24.2	28.8	25.8	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 16.12023 with 4 df; significance = 0.0029)

Table F.13. Smart-dull rankings on the "self" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	6	4	11	3	9	33
	Row %	18.2	12.1	33.3	9.1	27.3	50.0
	Col. %	37.5	20.0	64.7	75.0	100.0	
	Total %	9.1	6.1	16.7	4.5	13.6	
NE*	Count	10	16	6	1		33
	Row %	30.3	48.5	18.2	3.0		50.0
	Col. %	62.5	80.0	35.3	25.0		
	Total %	15.2	24.2	9.1	1.5		
Col. Total	Count	16	20	17	4	9	66
	%	24.2	30.3	25.8	6.1	13.6	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 19.67059 with 4 df; significance = 0.0006)

Table F.14. Smart-dull rankings on the "student in part-time resource" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	11	6	9	3	4	33
	Row %	33.3	18.2	27.3	9.1	12.1	50.0
	Col. %	100.0	75.0	64.3	16.7	26.7	
	Total %		9.1	13.6	4.5	6.1	
NE*	Count		2	5	15	11	33
	Row %		6.1	15.2	45.5	33.3	50.0
	Col. %		25.0	35.7	83.3	73.3	
	Total %		3.0	7.6	22.7	16.7	
Col. Total	Count %	11 16.7	8 12.1	14 21.2	18 27.3	15 22.7	66 100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 25.40952 with 4 df; significance = 0.0000)

Table F.15. Happy-sad rankings on the "self" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	21	2	5		5	33
	Row %	63.6	6.1	15.2		15.2	50.0
	Col. %	52.5	20.0	55.6		83.3	
	Total %	31.8	3.0	7.6		7.6	
NE*	Count	19	8	4	1	1	33
	Row %	57.6	24.2	12.1	3.0	3.0	50.0
	Col. %	47.5	80.0	44.4	100.0	16.7	
	Total %	28.8	12.1	6.1	1.5	1.5	
Col. Total	Count	40	10	9	1	6	66
	%	60.6	15.2	13.6	1.5	9.1	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 7.47778 with 4 df; significance = 0.1127)

Table F.16. Happy-sad rankings on the "student in part-time resource" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	19	5	5		4	33
	Row %	57.6	15.2	15.2		12.1	50.0
	Col. %	70.4	35.7	31.3		66.7	
	Total %	28.8	7.6	7.6		6.1	
NE*	Count	8	9	11	3	2	33
	Row %	24.2	27.3	33.3	9.1	6.1	50.0
	Col. %	29.6	64.3	68.8	100.0	33.3	
	Total %	12.1	13.6	16.7	4.5	3.0	
Col. Total	Count	27	14	16	3	6	66
	%	40.9	21.2	24.2	4.5	9.1	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 11.54101 with 4 df; significance = 0.0211)

Table F.17. Admire-pity rankings on the "self" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	20	5	6		2	33
	Row %	60.6	15.2	18.2		6.1	50.0
	Col. %	55.6	38.5	46.2		66.7	
	Total %	30.3	7.6	9.1		3.0	
NE*	Count	16	8	7	1	1	33
	Row %	48.5	24.2	21.2	3.0	3.0	50.0
	Col. %	44.4	61.5	53.8	100.0	33.3	
	Total %	24.2	12.1	10.6	1.5	1.5	
Col. Total	Count	36	13	13	1	3	66
	%	54.5	19.7	19.7	1.5	4.5	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 2.54701 with 4 df; significance = 0.6362)

Table F.18. Admire-pity rankings on the "student in part-time resource" role.

		Ranks					Row
Group		1	2	3	4	5	Total
LD*	Count	9	7	8	3	6	33
	Row %	27.3	21.2	24.2	9.1	18.2	50.0
	Col. %	75.0	70.0	57.1	20.0	40.0	
	Total %	13.6	10.6	12.1	4.5	9.1	
NE*	Count	3	3	6	12	9	33
	Row %	9.1	9.1	18.2	36.4	27.3	50.0
	Col. %	25.0	30.0	42.9	80.0	60.0	
	Total %	4.5	4.5	9.1	18.2	13.6	
Col. Total	Count	12	10	14	15	15	66
	%	18.2	15.2	21.2	22.7	22.7	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 10.88571 with 4 df; significance = 0.0279)

Table F.19. Strong-weak rankings on the "self" role.

Group	Ranks					Row Total
	1	2	3	4	5	
LD*	Count	14	2	14		3
	Row %	42.4	6.1	42.4		9.1
	Col. %	66.7	13.3	53.8		100.0
	Total %	21.2	3.0	21.2		4.5
NE*	Count	7	13	12	1	
	Row %	21.2	39.4	36.4	3.0	
	Col. %	33.3	86.7	46.2	100.0	
	Total %	10.6	19.7	18.2	1.5	
Col. Total	Count	21	15	26	1	3
	%	31.8	22.7	39.4	1.5	4.5
						66
						100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 14.55385 with 4 df; significance = 0.0057)

Table F.20. Strong-weak rankings on the "student in part-time resource" role.

Group		Ranks					Row Total
		1	2	3	4	5	
LD*	Count	9	6	9	2	7	33
	Row %	27.3	18.2	27.3	6.1	21.2	50.0
	Col. %	60.0	50.0	50.0	18.2	70.0	
	Total %	13.6	9.1	13.6	3.0	10.6	
NE*	Count	6	6	9	9	3	33
	Row %	18.2	18.2	27.3	27.3	9.1	50.0
	Col. %	40.0	50.0	50.0	81.8	30.0	
	Total %	9.1	9.1	13.6	13.6	4.5	
Col. Total	Count	15	12	18	11	10	66
	%	22.7	18.2	27.3	16.7	15.2	100.0

*LD = learning disabled; NE = non-exceptional.

(Chi square = 6.65455 with 4 df; significance = 0.1553)

VITA

William Alan Wray was born in Somerset, Kentucky on January 26, 1951. He spent his childhood in Oak Ridge, Tennessee where he attended elementary and secondary schools, graduating from Oak Ridge High School in June 1969. He received a Bachelor of Arts degree in Psychology from The University of Tennessee, Knoxville, in August 1973.

He was employed as a mental health worker and later as a group leader by the Psychiatric Service of St. Mary's Medical Center, Knoxville, Tennessee from 1973 until 1976.

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William Wray received the Doctor of Education degree, with major emphasis in the areas of Developmental and School Psychology, from The University of Tennessee, Knoxville, in December, 1979. At that time he was employed as a staff psychologist by Team Evaluation Center, Inc. of Chattanooga, Tennessee. He is married to the former Mary Susan Jarnagin of Dandridge, Tennessee.