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## Language Disabilities of Delinquent Adolescents

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## Abstract

### LANGUAGE DISABILITIES OF DELINQUENT ADOLESCENTS

By Sue E. Eaton

Many studies have been conducted on the prevalence of learning disabilities in the population of juvenile delinquents (Holte, 1972; Broder, Dunivant, Smith, and Sutton, 1981; Meltzer, 1983; Bachara and Zada, 1978). One investigation conducted by the United States Government, found that juvenile delinquents have severe learning problems (Reed and Heilman, 1981).

Learning disabilities appear in eight to 10 percent of all school age children and adolescents. Of that group, 39 to 63 percent show a language disorder syndrome which may negatively affect school learning over a broad range of the curriculum area (Semel and Wiig, 1980). The prevalence of learning disabilities in the juvenile delinquent population is significantly higher. It ranges from 26 to 71 percent (Reed and Heilman, 1981).

Fraze (1979) studied the language performance of juvenile delinquents to determine whether they were significantly different from nondelinquents. Fraze administered the Fullerton Test of Language Performance of Adolescents (FTLPA) (Thorun, 1978) when it was in its field test form. The FTLPA gives results over

eight broad language areas. The results showed the delinquents to be significantly lower than the nondelinquents in the area of morphology competency. Frazee indicated that additional research is needed to determine if juvenile delinquents have other deficits in language performance skills which the FTLPA does not assess, or that are so subtle that they require a more in-depth assessment of psycholinguistic language abilities than the FTLPA provides.

The Clinical Evaluation of Language Functions (CELF) (Semel and Wiig, 1980) was used to compare the language abilities of 25 delinquents and 25 nondelinquents. Each subject was evaluated individually with a pure-tone hearing screening, a vision screening, the Advanced Progressive Matrices, Set I, (Raven, 1958) as a screening test for intelligence, and the CELF.

The purpose of the present investigation was to identify underlying language disabilities in juvenile delinquents which could be contributing to their inappropriate academic and social behaviors. The data were statistically analyzed using a one-tailed paired t-test to compare the means and standard deviations of the experimental subjects with the control subjects on each of the 11 subtests of the CELF.

The results of this study indicated that juvenile delinquents did demonstrate significantly more errors than nondelinquents in the processing and production of language. The specific language areas in which a significant difference was demonstrated on the CELF were understanding linguistic concepts, critical thinking, long and short term memory, rapid recall of common words, and sentence formulation. The findings of this study suggested that further investigation may be needed to establish a link between language disabilities and juvenile delinquency.

LOMA LINDA UNIVERSITY

Graduate School

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LANGUAGE DISABILITIES OF DELINQUENT ADOLESCENTS

by

Sue E. Eaton

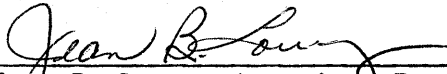
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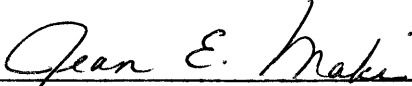
A Thesis in Partial Fulfillment  
of the Requirements for the Degree Master of Science  
in the Field of Speech Pathology


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August 1986

Each person whose signature appears below certifies that this thesis in his/her opinion is adequate, in scope and quality, as a thesis for the degree Master of Science.

  
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## Chapter 1

### THE NATURE AND SCOPE OF THE PROBLEM

Reviews concerning the prevalence of learning disabilities in nondelinquent male children were estimated to be between eight and 16 percent (Broder, Dunivant, Smith, and Sutton, 1981). The prevalence in the juvenile delinquent population is significantly higher, ranging from 26 to 71 percent (Reed and Heilman, 1981). This suggests that some relationship exists between delinquency and learning disabilities.

Of the 10 percent of learning disabilities in the normal population, 39 to 63 percent show a language disorder syndrome which may negatively affect school learning over a broad range of the curriculum areas (Semel and Wiig, 1980). These figures indicate a definite link between learning disabilities and language disorders.

Evidence suggests that many juvenile delinquents are "handicapped children" with language/learning disabilities. It is suggested that their poor skills of comprehension and expressive communication have brought about the socially-inappropriate behavior which lead to their classification as juvenile delinquents (American Speech and Hearing Association, 1973).

Mattingly (1972) suggested in his study that the core of the learning disabilities for some children is at the language-symbolic level. Mattingly further suggests that reading is a language activity of a special nature which relies strongly on the phonological (sounds), lexical (vocabulary), and comprehension systems already available to the child.

Stick (1976) suggests that reading, spelling, writing, and arithmetic problems are frequently the products of an underlying language comprehension and expressive disorder, and that treatment of the underlying problem, not the symptom, is necessary. Individualizing academic programs to meet each child's language needs (as opposed to reading or writing needs) is widely discussed but seldom practiced (Reed and Heilman, 1981).

### The Presenting Problem

The presenting problem was that people are unaware of specific language disabilities of juvenile delinquents. This may be causing them to be treated more severely by the law enforcement system.

### Purpose of the Study

The purpose of this study was to identify underlying language disabilities of juvenile delinquents as tested on the Clinical Evaluation of

These underlying language disabilities may be contributing to the inappropriate academic and/or social behaviors of juvenile delinquents.

### Rationale for Test Selection

Previous testing of juvenile delinquents for language ability has been done by Frazee (1979) using the Fullerton Test of Language Performance of Adolescents (FTLPA) (Thorun, 1978). Frazee suggested that more extensive testing needed to be done. The Clinical Evaluation of Language Functions (CELF) (Semel and Wiig, 1980) has been developed and standardized on the adolescent population. It was selected for inclusion in this investigation because it tested a broad range of receptive and expressive language skills. It further provides an in-depth analysis on several of these language areas.

### Hypothesis

The null hypothesis is:

There will be no significant difference in the language performance scores of juvenile delinquents versus nondelinquent subjects on the CELF.

### Operational Definition of Terms

Learning disability. Impairment of the ability of a seemingly normal child to learn because of conditions

such as environmental deprivation, drugs, nutritional deficits, metabolic disorders, and brain damage.

(Perkins, 1977, p. 429).

Morphology. The rules of word formation. (Perkins, 1977, p. 429).

Language. The symbolic formulation of ideas according to semantic and grammatical rules. (Perkins, 1977, p.3).

Language Processing. The process of hearing, discriminating, assigning significance to, and interpreting spoken words, phrases, clauses, sentences, and discourse. (Wiig and Semel, 1984, p. 664).

Language Production. The process of forming ideas or thoughts, finding words to express them, formulating sentences to structure the words, and producing the combined product in a spoken language form. (Wiig and Semel, 1984, p.664).

Delinquent. In this study delinquents were juveniles who were adjudicated in the Riverside County Juvenile Hall and Van Horn Youth Center.

Nondelinquent. The nondelinquents in this study were adolescents with no known delinquent behaviors according to school records and self reports.

## Chapter 2

### REVIEW OF THE LITERATURE

#### Learning Disabilities in Juvenile Delinquents

Many studies have been conducted on the relationship between learning disabilities and juvenile delinquency. Jacobson (no date), in his study, found that 50 to 80 percent of the delinquent population are learning disabled. He states that most learning-disabled children are unable to obtain good grades. Because of this continued academic failure and the labeling that goes with it, the child is unhappy, unable to adjust, and frustrated.

Jacobson supports those researchers who suggest that frustration leads to aggression. The question arises as to whether learning disabilities generate delinquency, or if poor learning is a result of the delinquent's belligerent attitude toward teachers and school.

Kane and Alley (1980) reviewed a 1977 study by the Department of Justice. This study indicated that, of the juvenile delinquents in institutions tested by the United States General's Office Administration Consultants, one-fourth had primary learning problems.

Holte (1972) conducted a study in which a series of tests were administered to 35 children in detention.

Of the children in detention, 80 percent ranged from two to seven years below their chronological age level in reading and spelling. For remediation he stressed treatment of reading skills.

In his research, Lane (1980) discussed juvenile delinquents with respect to school failure. One concept, acknowledged by delinquency theorists, was the significance of continued school failure in the development of juvenile delinquents. The other concept was that learning disabilities were being recognized as a leading and sometimes undetected cause of school failure. Lane indicated that the natural extension of these two concepts would be a relationship between learning disabilities and juvenile delinquency.

Because of the growing belief in the relationship between juvenile delinquency and learning disabilities, many requests were made to the Law Enforcement Assistance Administration (LEAA) to implement treatment and prevention programs for learning-disabled juveniles who were likely to become delinquent. Because there was criticism of this viewpoint, the Law Enforcement Assistance Administration (LEAA) and the National Institute for Juvenile Justice and Delinquency Prevention asked the American Institute for Research (AIR) to conduct an objective review. This report was issued in 1976.

Lane (1980) discussed the AIR Report in his article. The AIR Report reviewed two theoretical models which provide basic rationale to support the link between learning disabilities and juvenile delinquency. They are the Susceptibility Rationale and the School Failure Rationale. The Susceptibility Rationale states that certain types of learning disabilities are accompanied by personality attributes that act as social liabilities and increase the likelihood of delinquent behavior. The School Failure Rationale views learning disabilities as a cause of continued failure in school. School failure leads to the labeling process in which the learning-disabled child is negatively viewed by adults, peers, and eventually himself. Negative self-image results in the learning-disabled child associating with a peer group that is delinquency prone. It is speculated that this occurs in order to satisfy the child's increased need for successful experiences.

The AIR Report rejects both the Susceptibility Rationale and the School Failure Rationale. The rejection is based on their unwillingness to accept a single cause explanation of delinquency.

The AIR Report's review of the two theoretical models and supporting evidence of the learning disability and juvenile delinquency link concluded:

As of the end of 1975, the existence of a causal relationship between learning disabilities and delinquency has not been established; the evidence for a causal link is feeble (Lane, 1980, p.22).

The AIR report indicated that the supportive research surrounding the issue was inadequate. AIR stated that: 1) no longitudinal study of the learning disabled and juvenile delinquency link had been or was being done, 2) no study had established that the average delinquent suffered more from learning disabilities than the average nondelinquent, and 3) current studies had definitional and methodological problems. Even though their findings were negative, AIR indicated that the qualitative observations of professionals in the Juvenile Justice and Education fields, along with the few fragmentary pieces of good quantitative research, suggest that a broader pattern of learning handicaps, including learning disabilities, may exist among delinquents.

The AIR report recommended to LEAA that they carry out research to find the incidence of learning handicaps, including learning disabilities, within several specific populations. AIR also suggested that LEAA support a demonstration project to examine the usefulness of diagnosing and treating learning disabilities as an aid to the rehabilitation of juvenile offenders.



Lane (1980) also discussed the National Association for Learning Disabilities-Research and Development (ACLD-R&D) Project, a research and development program being jointly conducted by the National Association for Children with Learning Disabilities and the National Center for State Courts, which was funded by the Office of Juvenile Justice and Delinquency Prevention (OJJDP) of the Justice Department. The results of this project did not support the Susceptibility Rationale or the School Failure Rationale. They developed a new hypothesis, the "Different Treatment Rationale." This states that children with learning disabilities and children without learning disabilities participate in the same kinds and amounts of delinquent behavior. However, even though behaviors and frequency of police contacts are similar, more learning-disabled juvenile delinquents are adjudicated. This may be because in one or more elements of the juvenile justice system the learning-disabled child is treated differently than the normal child. This difference of treatment may be due to language or communication difficulties usually found in learning-disabled children, subtle aspects of the learning-disabled child's personal attributes, or the court's consideration of the poor school record and

history of academic failure which often follows the learning-disabled child.

Broder, Dunivant, Smith, and Sutton (1981) systematically examined the nature of the relationship between learning disabilities and delinquency. There were 1,617 boys in this study, between the ages of 12 and 15. The subjects were divided into two groups: 633 boys who were adjudicated delinquents or status offenders by juvenile courts, and 984 boys with no records of adjudication by juvenile courts. A battery of tests were administered, including: the Wechsler Intelligence Scale for Children-Revised (WISC-R; Wechsler, 1974), the Woodcock Reading Mastery Tests (Woodcock, 1973), the Key Math Diagnostic Arithmetic Test (Connolly, Nachtman, and Pritchett, 1976), and the Visual Motor Gestalt Test (Bender, 1946). The tester completed a checklist regarding the subjects' behavior during the testing session. In addition each boy was interviewed individually regarding his family background, school attitude, and self-reported delinquency.

The results of the Broder et al. (1981) investigation support the hypothesis of a relationship between learning disability and delinquency. They do not support the conclusion that learning-disabled boys engage in more delinquent behavior than

nonlearning-disabled boys. The findings indicated a significant relationship between learning disabilities and the likelihood of adjudication. This supports the theory that juveniles with learning disabilities are treated differently by the juvenile justice system than nonlearning-disabled juveniles. It is not certain how different treatment might operate nor at what decision points in the juvenile justice system it might occur, however, some speculation has been offered by Broder et al. (1981). First, the expressive deficits demonstrated by some learning-disabled youths could make them more vulnerable than nonlearning-disabled youths to formal processing by justice system officials because they are less able to present their perceptions of events. Second, those who work in juvenile courts have observed that learning-disabled youths evoke negative responses from others by the way they present themselves. Third, a youngster's understanding of and response to the juvenile justice system could be significantly affected by an inability to comprehend the significance of abstract ideas.

Meltzer (1983) evaluated 53 delinquents, 26 learning-disabled adolescents, and 50 average achievers on newly developed educational and cognitive inventories. These were used to analyze many functional areas including processing efficiency,

problem-solving, and response style. A three point rating scale was developed for qualitative analysis of response style, processing efficiency, and error patterns. This supplemented the grade-equivalent scores which were obtained in the basic skill areas. Traditional diagnostic indicators of learning problems were incorporated into the rating scale and emphasized language-based errors, visual-spatial deficits, confusions of sequential order, and evaluation of written language. In order to evaluate problem-solving strategies and reasoning ability, a process-oriented cognitive inventory was developed. The findings of this study reveal three major conclusions: 1) the possible existence of various subtypes of delinquency which could be differentiated using process-oriented cognitive and educational assessment techniques, 2) juvenile delinquency may represent one possible end-result of a specific learning disability, and 3) the importance of profile analysis for educational assessment and remediation in treatment programs for delinquency. Meltzer stated:

Intensive individualized remedial programs may be essential for all children exhibiting learning disorders to prevent the possible onset of delinquency and to contribute to a more positive outcome (p.13).

The Reiter (1982) review of the literature on school achievement and juvenile delinquency reiterates

many of the previous findings from prior studies. Delinquent students show a strong dislike of school. A correlation between reading disabilities and juvenile delinquency is apparent. There may be a possible causal factor between family background and academic failure and delinquent behavior. Students with anti-social behavior disorders continue to show a lag in neurological development and deficiencies in attention span. Studies by the federal government have determined that youngsters who have a low success rate are vulnerable to participating in delinquent behavior, and that one-fourth of juvenile delinquents in institutions show evidence of learning problems.

#### The Relationship Between Learning Disabilities and Language Disorder

Semel and Wiig (1975) did a study to assess and compare the: 1) understanding of important verbal elements, using the Assessment of Childrens' Language Comprehension Test (Foster, Giddan, and Stark, 1972) and 2) understanding and use of syntactic structures, using the Northwestern Syntax Screening Test (NSST) (Lee, 1969) by learning-disabled and academically achieving children. It also contrasted the test results of learning-disabled children ages 7-0 to 9-0 and 9-1 to 11-6, assessed possible relationships between measures of language processing and production

and between measures of intelligence and achievement and the current measures of language processing and production.

The subjects were seven girls and 27 boys with learning-disabilities diagnosed by a psychoeducational team. They were in regular classes in grades two through seven. Academic Achievement was evaluated using the Peabody Individual Achievement Test (Dunn and Markwardt, 1970). They were referred for in-depth assessment because of academic problems pertaining to reading recognition, reading comprehension and spelling. None had been diagnosed as having language problems.

The control subjects were 17 randomly selected students who did not have learning disabilities. None had been diagnosed as having language problems.

The learning-disabled subjects made significantly more errors on both the receptive and expressive subtests of the NSST than the controls. The learning-disabled subjects exhibited significant quantitative reductions in both the comprehension and expression of syntactic structures. Learning-disabled subjects demonstrated quantitative reductions in the ability to process and synthesize critical verbal elements. The authors state:

These findings provide additional support for a previously stated need for oral language-based

educational intervention in the curricula for learning-disabled children (Semel and Wiig, 1975, p. 58).

Stick (1976) reported that children with learning disabilities show such observable behaviors as poor reading, writing, spelling, or arithmetic skills and may display poor social behavior. The possibility that these children may, in fact, have an underlying language disorder, while the behaviors of poor reading, spelling, or arithmetic are merely symptoms of that disorder must be seriously considered.

Larsen (1976) defined two elements which identify a learning disability. These are extensive academic underachievement and evidence of an oral or written language disorder which seriously contributes to the school failure.

Wiig and Fleischmann (1980) studied college students with learning disabilities. All were diagnosed by a psychoeducational team as learning disabled.

The control group was made up of college students with no learning-disability histories. The subjects and controls were matched for socio-economic backgrounds, racioethnic backgrounds, and educational level.

The test battery contained seven written subtests in multiple-choice format designed to evaluate

knowledge and application of the distributional rules for spatial, temporal, and idiomatic prepositions, possessive, possessive replacive, and reflexive pronouns, and relativization. They found that language delays in the acquisition of syntactic rules do not recover spontaneously as a function of maturational processes or from exposure to more advanced reading materials.

The findings of this study uphold the general hypothesis that syntactic deficits related with learning disabilities may continue into adulthood. The authors stress the importance of early identification of delays in the acquisition of syntactic rules for forming complex sentences. Delays in the acquisition of syntactic rules indicate the presence of deficits which could limit the learning-disabled individuals potential for academic and social achievement and self-realization. They state that early delays in the acquisition of syntactic rules could also be regarded as indicators of a need for language intervention to facilitate and establish syntactic maturity.

#### Language Disorders in Juvenile Delinquents

In 1973, the American Speech and Hearing Association (ASHA) assigned a Task Force to research the speech pathology and audiology services needed among adult prison inmates. They cited several studies



which had been conducted in adult and juvenile institutions. Results of these studies indicated that 58.3 percent of the delinquents exhibited some type of speech disorder. In the female delinquent population, the incidence of speech and language disorders was three times that of comparable subjects in the public schools. It was also reported that language disabilities were four times more prevalent in adult prisoners than in comparable noninstitutionalized adult groups.

From its review of the research, ASHA, (1973), concluded that:

1. While few of the studies cited have made specific reference to language examinations, the high percentages of reading, writing, speech and hearing problems found among prison inmates make it likely that specific language disabilities do exist to a high degree in this population (p.11).
2. Task force members suggest that review of subtest scores or intelligence studies of delinquents and adult prisoners would possibly confirm observations that prison inmates have a higher percentage of language disabilities than comparable noninstitutionalized groups (p.12).
3. Task force members concluded that, despite differences in methodology among studies reported, that the incidence of speech, hearing, and language disorders is significantly greater for juvenile delinquents and adult prison inmates than in the general population (p.12).

Berman and Siegal (1976) conducted a large-scale, controlled study of a variety of adaptive skills and

deficits of delinquent male students as compared with matched nondelinquent students. The 45 delinquent subjects and an equal number of nondelinquent controls were given a complete neuropsychological battery and the Wechsler Adult Intelligence Scale (WAIS) (Wechsler, 1958). They found that delinquents as a group had substantially greater impoverishment of verbal skills, adaptive abilities, and extreme impairment in verbal, perceptual, and non-verbal conceptual spheres than nondelinquents.

Frazeo (1979) studied the language performance of 30 juvenile delinquents and 30 nondelinquents to determine whether they were significantly different. She administered the Fullerton Test of Language Performance of Adolescents (FTLPA) (Thorun, 1978) when it was in its field test form. The FTLPA gives results over eight broad language areas.

The results of Frazeo's study showed that delinquents were significantly lower than nondelinquents in the area of morphology competency. This difficulty might conceivably cause problems for delinquents in understanding what is expected of them as well as formulating and expressing their own thoughts. Frazeo also found that juvenile delinquents may have an incomplete mastery of strategies required for grammatic competency, oral commands, and idioms.

Reed and Heilman (1981) have discussed in their study that all three of the previously mentioned rationales (Susceptibility Rationale, School Failure Rationale, and Different Treatment Rationale) had in common the inclusion of a social concept. If the key factor in the learning disabilities and delinquency relationship is a social issue, the delinquent's language skills must be examined because most social interaction is carried on through receptive and expressive language. Learning-disabled adolescents are reported to display definite language problems, in addition to socially related problems arising from distractibility and impulsivity.

#### Summary of the Review of the Literature

The review of the literature indicates that the juvenile delinquent population has a higher prevalence of learning disabilities than the nondelinquent population. The causal relationship between juvenile delinquency and learning disabilities has not as yet been scientifically substantiated. Is the learning disability causing the juvenile delinquency and school failure or is the juvenile delinquency alone causing school failure?

Learning disabilities have been linked to language disorders. The studies reviewed in the literature indicate the juvenile delinquents have a higher

incidence of language disorders than the nondelinquents. It is hypothesized by Stick (1976) that many learning-disabled delinquents have an underlying language disorder which is the core of their problem and that the overt behaviors which are observable are merely the symptoms of this language based problem. Many of the studies indicated that the subjects were tested with achievement tests and intelligence tests, and those examinations that were language based were usually standardized for children, not adolescents. Frazee's 1979 study used a language test for adolescents (The Fullerton Test of Language Performance of Adolescents); however, it was still in its field test form at the time of the study. Frazee recommended that more extensive language testing be done with the juvenile delinquent population.

The present study was designed to investigate whether the juvenile delinquent's language performance is significantly different from that of nondelinquents, using the Clinical Evaluation of Language Functions (CELF) (Semel and Wiig, 1980). This is standardized test of receptive and expressive language abilities of adolescents.

## Chapter 3

### RESEARCH DESIGN AND PROCEDURES

#### Subjects

A matched pairs research design was used in which fifty male, Caucasian adolescents between the ages of 14 and 17 years ( $\bar{X}$ =15 years - 9 months) years served as subjects for the present study. The 25 experimental subjects were selected from among adolescents who were in residence at the Riverside County Juvenile Hall and Van Horn Youth Center, in Riverside, California. The 25 control subjects were chosen from the La Sierra High School in Riverside, California. The experimental and control subjects were matched on four variables including: sex, age, race, and parent occupational category (Darley and Spriestersbach, 1963).

#### Screening Tests

The following battery of tests was administered to each subject. All subjects were required to pass the screening tests in order to qualify for the study.

1. A pure-tone audiometric screening test was administered using a portable audiometer, MAICO/MA-20, at 25 dBHL to establish that the subjects had normal hearing. The frequencies tested were 1000, 2000, and 4000 Hz.
2. The Advanced Progressive Matrices, Set I (Raven, 1958) was used as a quick test to screen from the study population any adolescents who are below the tenth percentile in intelligence. This screening test is

appropriate to use with individuals having communicative disorders because it requires no verbal responses.

3. A visual screening test (Hanson, 1981) was used to establish that the subjects had normal vision.

### Procedure

The battery of screening tests was administered individually to each subject during a single testing session, approximately one hour in length. Two different settings were used. The delinquent sample was tested at the Riverside County Juvenile Hall facility and the controls were tested at La Sierra High School. The subjects were seated at a table, across from the examiner, in a quiet room. The intelligence, audiometric, and visual screenings were given first, followed by the administration of the Clinical Evaluation of Language Functions (CELF) (Semel and Wiig, 1980).

The CELF tests 11 language areas, 6 processing tests and 5 production tests. These tests are:

- 1-Word and Sentence Structure
- 2-Word Classes
- 3-Linguistic Concepts
- 4-Relationships and Ambiguities
- 5-Oral Directions
- 6-Spoken Paragraphs
- 7-Word Series

8-Confrontation Naming

23

9-Word Associations

10-Model Sentences

11-Formulated Sentences

Within seven of these subtest areas there is an error analysis grid which allows an in-depth assessment of the subject's language performance on these subtests. Areas are indicated which need further, extensive study and possible remediation.

The general purpose of the Clinical Evaluation of Language Functions is to provide differentiated measures of selected language functions in the areas of phonology, syntax, semantics, memory, and word finding and retrieval. These measures were designed to probe specific language processing and production abilities of school age children over a wide range of grade levels. The subtests were designed to assist in the identification of children in Grades K through 12 with language disabilities, to provide a differential diagnosis of area of involvement through selected language probes, and to identify areas for follow-up, language intervention. The CELF was not designed to provide in-depth assessment at the levels of phonology or pragmatics (Semel and Wiig, 1980, p.1).

Procedures for the hearing and vision screenings are reported in Appendix A. Detailed directions for the administration of the Advanced Progressive Matrices, Set I, and the CELF are in the manuals which accompany the tests. These procedures were followed as indicated in the respective manuals.

## Chapter 4

### RESULTS

The language disabilities of 25 delinquent adolescents versus 25 nondelinquent adolescents between the ages of 14 and 17 were evaluated in this study. The two groups were matched by race, sex, age, and parent occupational category. The Clinical Evaluation of Language Functions (CELF) (Semel and Wiig, 1980) was used to determine if their receptive and expressive language skills were appropriate to grade level expectation.

#### Statistical Analysis

A one-tailed paired t-test was used to compare the means and the standard deviations of the experimental subjects with the control subjects on each of the 11 subtests of the CELF. This comparison and the level of significance is reported in Table 1.

There was a significant difference ( $p < .05$ ) between the experimental and control subjects on both the total processing score and the total production score. A significant difference ( $p < .05$ ) was also found for the following subtests:

- 1-Linguistic Concepts
- 2-Relationships and Ambiguities
- 3-Spoken Paragraphs



TABLE 1

Mean total and subtest scores on the CELF, standard deviations, and levels of significance for delinquent and nondelinquent subjects.

<u>TEST</u>	<u>MN(SD)</u> <u>DELINQUENT</u>	<u>MN(SD)</u> <u>NONDELINQUENT</u>	<u>LEVEL OF</u> <u>SIGNIFICANCE</u> *
Total Processing	240.6(8.2)	251.7(11.3)	.00#
Word and Sentence Structure	45.5(3.3)	46.2(2.4)	.18
Word Classes	39.4(3.1)	40.0(2.3)	.19
Linguistic Concepts	40.0(2.1)	41.0(1.5)	.01#
Relationships and Ambiguities	51.4(5.1)	54.6(5.3)	.03#
Oral Directions	46.1(2.7)	47.2(2.8)	.09
Spoken Paragraphs	18.4(3.9)	22.5(5.3)	.01#
Total Production	192.2(20.6)	212.5(18.6)	.00#
Word Series	10.6(3.1)	11.2(1.6)	.17
Confrontation Naming	70.8(16.5)	79.5(8.4)	.01#
Word Associations	34.2(6.2)	38.9(8.8)	.02#
Model Sentences	48.2(6.8)	47.0(5.9)	.23
Formulated Sentences	38.7(10.6)	47.0(6.8)	.00#

\* One-tailed paired t-test  
# Statistically significant

4-Confrontation Naming

5-Word Associations

6-Formulated Sentences

No significant difference was found on the following subtests:

1-Word and Sentence Structure

2-Word Classes

3-Oral Directions

4-Word Series

5-Model Sentences

#### Frequency Distribution

Of the 11 subtests on the CELF, seven include an error analysis grid. On three of these subtests there was a significant difference between the performances of juvenile delinquents and nondelinquents. These tests included Linguistic Concepts, Relationships and Ambiguities, and Formulated Sentences. On these subtests a frequency distribution was also conducted, comparing the types and number of errors of the experimental and control subjects. Results of these subtests are reported in Tables 2, 3, and 4.

TABLE 2

Frequency distribution comparing number and type of errors for delinquents and nondelinquents on the CELF for the Linguistic Concepts subtest.

<u>CATEGORY</u>	<u>DELINQUENT</u>	<u>NONDELINQUENT</u>
Coordination (2)		
0 Missed	25	25
Conditional (10,11)		
0 Missed	21	24
1 Missed	4	1
Exclusion (1,3,6,12,17,18)		
0 Missed	23	25
1 Missed	2	0
Inclusion (12,15,16,19,20)		
0 Missed	24	21
1 Missed	1	4
Temporal (5,7,8,9,10,11,13,21,22)		
0 Missed	3	3
1 Missed	7	15
2 Missed	11	5
3 Missed	3	5
4 Missed	0	2
5 Missed	1	0
Instrumental (4,14,17)		
0 Missed	25	25

TABLE 3

Frequency distribution comparing number and type of errors for delinquents and nondelinquents on CELF for the Relationships and Ambiguities subtest.

<u>CATEGORY</u>	<u>DELINQUENT</u>	<u>NONDELINQUENT</u>
Comparative Relationships		
0 Missed	9	13
1 Missed	12	10
2 Missed	4	2
Passive Relationships (5,10,13,14)		
0 Missed	13	16
1 Missed	9	7
2 Missed	2	2
3 Missed	1	0
Spatial Relationships (4,20,26,28)		
0 Missed	13	18
1 Missed	9	6
2 Missed	2	1
3 Missed	1	0
Temporal-Sequential Relationships (7,21,23,25)		
0 Missed	18	20
1 Missed	4	5
2 Missed	3	0
Familial Relationships (6,15,22,24)		
0 Missed	10	9
1 Missed	10	14
2 Missed	3	2
3 Missed	2	0
Analogous Relationships (3,9,16,18)		
0 Missed	17	18
1 Missed	7	7
2 Missed	0	0
3 Missed	1	0
Idioms and Metaphors (8,11,17,27)		
0 Missed	8	11
1 Missed	13	12
2 Missed	4	2
Proverbs (29,30,31,32)		
0 Missed	7	12
1 Missed	8	7
2 Missed	8	2
3 Missed	1	4
4 Missed	1	0

TABLE 4

Frequency distribution comparing number and type of errors for delinquents and nondelinquents on CELF for the Formulated Sentences subtest.

<u>CATEGORY</u>	<u>DELINQUENT</u>	<u>NONDELINQUENT</u>
Incomplete or Agrammatical Sentences	32	8
Simple Sentences	74	54
Simple Sentences with Compound Subject, Verb, Object	3	3
Simple Sentences with Phrase(s)	88	110
Compound Sentences	1	1
Negative Sentences	26	31
Interrogative Sentences	31	27
Complex Sentences with Subordinative Conjunction	42	65
Complex Sentences with Relative Clauses and/or Embedding	0	1

## CHAPTER 5

### DISCUSSION

The purpose of this study was to determine if a significant difference exists in the language performance of the juvenile delinquent sample as compared with the nondelinquent sample. This investigation included 25 delinquent and 25 nondelinquent male, Caucasian subjects, between the ages of 14 and 17. The subjects were matched for age, race, sex, and parental occupation. The Clinical Evaluation of Language Functions (CELF) (Semel and Wiig, 1980) was used to compare the receptive and expressive language skills of delinquent and nondelinquent adolescents.

Results of this study showed that the juvenile delinquent subjects scored significantly lower ( $p < .05$ ) than the nondelinquent subjects on both the total processing score and the total production score on the CELF. Significant differences were found for the following six subtests.

Linguistic Concepts. Results on this subtest indicate that the delinquent population may find it difficult to process and interpret oral directions which contain linguistic concepts requiring logical operations. Specifically, the concept test items in

which the delinquent population showed more errors than the nondelinquent population were:

- 1-Conditional (if, don't - - until)
- 2-Exclusion (not, all - - except, either - - or, no instead)
- 3-Temporal (after, when, before)

Relationships and Ambiguities. The findings on this subtest suggest that the delinquent population may have problems with the critical thinking skills involved in comparative, passive, spatial, temporal-sequential, familial, and analogous relationships and idioms, metaphors, and proverbs. The delinquent population had a higher number of errors in these specific categories:

- 1-Comparative Relationships
- 2-Passive Relationships
- 3-Spatial Relationships
- 4-Temporal Sequential Relationships
- 5-Idioms and Metaphors
- 6-Proverbs

Spoken Paragraphs. This subtest evaluates the ability to understand and recall important information from material presented orally. Difficulty on this subtest may suggest problems with the ability to understand and interpret spoken information, to select important information from presented materials, and to

retain and recall details contained in the information given.

Confrontation Naming. This subtest evaluates the ability to rapidly name common words under time pressure. Subjects who have difficulty with this task may have trouble with rapid and accurate word retrieval of common words.

Producing Word Associations. This subtest evaluates the ability to retrieve semantically related word series from long term memory. Low scores on this subtest may suggest difficulty with quickly identifying and producing words which belong to a given semantic category.

Producing Formulated Sentences. This subtest looks at the subjects' ability to formulate and produce sentences when given specific words. Low scores on this subtest may suggest difficulty with semantic and syntactic constraints of specific words as well as length and complexity of sentence structures. The delinquent subjects used more incomplete or agrammatical sentences, simple sentences, and interrogative sentences. The nondelinquent population used more simple sentences with phrases, negative sentences, and complex sentences.

The results of this study indicate that the overall receptive and expressive language skills are



significantly lower in the juvenile delinquent group as compared to the nondelinquent group. The findings are consistent with the ASHA (1973) study.

The findings of the present investigation may be related to the study in which Lane (1980) described the School Failure Rationale which views learning disabilities as a cause for failure in school. The learning-disabled child is then negatively labeled by adults, peers, and ultimately by himself. This negative self-image and a need for successful experiences may lead the learning-disabled child to join a peer group that is delinquency prone. This study indicated that juvenile delinquents demonstrated significantly more errors in the understanding and use of language. These findings show that juvenile delinquents could have more difficulty than nondelinquents with following classroom directions, solving problems, remembering information, selecting important ideas from material presented orally, and expressing themselves. Problems in these areas could contribute to school failure. Therefore, language disabilities should also be investigated as a possible contributing factor to the School Failure Rationale.

The findings of the present investigation could also be related to the Broder, et al. (1981) report in which they supported the Different Treatment Rationale.

The theory behind this rationale is that learning-disabled adolescents and nonlearning-disabled adolescents participate in the same kinds and amounts of delinquent behavior. The behaviors and police contacts are similar. However, more learning-disabled juvenile delinquents are adjudicated. It is speculated that this occurs because the learning-disabled child is treated differently than the child with no learning disabilities. This study suggests that juvenile delinquents do not express themselves as well as nondelinquents. Because they cannot express their knowledge of events as well as nondelinquent juveniles, they could be more vulnerable to formal processing by juvenile system officials. In this study the juvenile delinquents also demonstrated more problems in understanding abstract ideas than the nondelinquents. Thus, they may have difficulty understanding and responding to the juvenile justice system.

ASHA (1973), suggests that poor receptive and expressive language skills contribute to socially-inappropriate behavior. This study indicates that juvenile delinquents do demonstrate significantly lower receptive and expressive language skills as compared to nondelinquents. These findings suggest that, having identified a correlation between language problems and juvenile delinquency, it could be

important to study the effectiveness of early identification and remediation of language problems in an effort to eliminate one of the factors which may contribute to the socially-inappropriate behaviors of juvenile delinquency, school failure, and different treatment by justice system officials.

## CHAPTER 6

## SUMMARY AND CONCLUSIONS

The purpose of this investigation was to determine if a significant difference exists in the language performance of the juvenile delinquent population as compared with the nondelinquent population. The language abilities of the 25 delinquents and the 25 nondelinquents were compared using the Clinical Evaluation of Language Functions (CELF) (Semel and Wiig, 1980).

The results of this study indicated that the overall receptive and expressive language skills were significantly lower in the delinquent group as compared to the nondelinquent group. The juvenile delinquent subjects had difficulties in areas which require them to: 1) follow directions involving linguistic concepts, 2) think critically, 3) retain information, 4) recall details, 5) rapidly retrieve words, and 6) formulate and produce sentences with a higher level of structural complexity.

The findings of this study suggested that there may be a link between language disabilities and juvenile delinquency. It would be overly simplistic to state that this is the single cause or even a major contributing factor to juvenile delinquency. However,

the results of this study do indicate that language testing of juvenile delinquents is warranted.

#### Suggestions For Further Study

The present investigation included a limited number of subjects and was limited to one language test. Although the CELF tests many aspects of receptive and expressive language, there are certainly additional aspects which investigators may want to research with a juvenile delinquent population.

Because of the Different Treatment Rationale it would be important for researchers to investigate the prevalence of language disabilities in the nonadjudicated delinquent population as compared with delinquents who are adjudicated. If it is confirmed that language disabilities are more prevalent in adjudicated delinquents, recommendations might be formalized, informing law enforcement officials of the difficulties some juvenile delinquents may experience within the juvenile justice system.

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APPENDIX A

PROCEDURES FOR HEARING AND VISION SCREENING

### Hearing Screening.

A portable audiometer, MAICO/MA-20, was used for the audiometric screening test. Any potential subject who failed to respond at the 25 dBHL screening level at any of the frequencies was not qualified to continue as a participant in the study.

### Vision Screening.

The visual screening test consisted of six tests. Instruction for administration of these tests follows:

Visual Acuity. This is a test for myopia and amblyopia. The child is presented with an Illiterate or Tumbling E chart at the distance of 20 feet. A rounded 3x5 card is placed in front of the left eye and the child is asked to determine which direction the E is positioned -- right, left, up or down. The same is repeated with the opposite eye. A Snellen Fraction of acuity is recorded as 20/50, 20/40, 20/30 or 20/20. If the child misses one-half or more of the 20/40 line, or if one eye is two lines poorer in acuity, it is considered a failure.

Plus Lens Test. This is a test for hyperopia. The child is once again shown the chart at a distance of 20 feet. A +2.00 diopter lens is placed in front of the child's right eye while the left eye is occluded

with a rounded 3x5 inch card. The child is asked to determine the direction of the specified E. This is repeated once more with the opposite eye. A Snellen Fraction of acuity is recorded as was recorded in the visual acuity test. If the child can see 20/40 or better with the lens in place, this is considered a failure.

Hirshberg Test. This is a test of binocular vision dysfunction. This test is performed with a pen light at the distance of approximately 16 inches. The penlight is held in the midline of the examiner, and the child is directed to look at the light. The examiner looks at the reflex off of the cornea of the child to determine if the reflex angles are equal. Reflex angles are recorded as being equal or unequal. Any deviation from being equal is considered a failure.

Cover test. This is a test of binocular vision dysfunction. The child is asked to look across the room at a fine, detailed object. A rounded 3x5 inch card is then placed in front of one eye and alternately flashed from eye to eye to determine whether there is any movement of the eyes from a straight ahead visual axis. This test is repeated at a distance of 16 inches as the child is directed to an accommodative object, such as the tip of a pen or pen light. This is recorded by reporting whether the eyes turn in, turn

out, or remain in the same position. Any deviation is marked down as being none, slight, or obvious. Any obvious esophoria or exophoria is considered a failure.

Near Point of Convergence. This is a test for convergence insufficiency. The child is asked to look at a pen light or tip of a pen. He is then directed to follow it toward his nose in the midline until he sees double or until the examiner notes that the eyes fail to fixate on the object. The object is then taken away slowly until the eyes fixate again. The examiner records the near point of convergence in inches. It is considered a failure if the child cannot maintain fixation to within at least three inches of the bridge of the nose without either eye turning in or out.

Ocular Motility Dysfunction. This is a test for ocular motor dysfunctions. The child is again asked to look at a pen light or an accommodative object at a distance of approximately 16 inches. The child is then asked to watch the motion of the object as it is moved in a circular motion to determine if there is any limitation in eye muscle movement. The examiner records any difficulty noted. Inability to follow the object, or restriction in any field of gaze is considered a failure.