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Language Skills of Adolescents with Emotional Disorders

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LANGUAGE SKILLS OF ADOLESCENTS
WITH EMOTIONAL DISORDERS

by
Diane T. Hardy

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Master of Arts
Department of Speech Pathology and Audiology

Western Michigan University
Kalamazoo, Michigan
April 1993
The language abilities of adolescents with emotional impairments were examined to determine the differences that may occur between this population and that of a control group of similar age, race, and gender. Ten adolescents with emotional impairments and ten students in general education were examined using two procedures. The Screening Test of Adolescent Language (STAL) (Prather, Breecher, Stafford, & Wallace, 1980) includes four subtests: vocabulary, auditory memory span, language processing, and proverb explanation. A language sample was also gathered using a cartoon video narration task (Dollaghan, Campbell, & Tomlin, 1990) which examined for syntactic, semantic, and discourse variables.

Results indicated that the subjects with emotional impairments scored significantly lower on the total score for the STAL and in description of significant events occurring in the video. No other significant differences were found in video narration by the students with emotional impairments.
ACKNOWLEDGMENTS

The completion of this project has been challenging. I stuck with it because of the encouragement I received from the people around me. To those people I am extremely grateful. I hesitate to mention names because I'm afraid I may forget someone. If I do forget a name I'll just have to trust that the people who helped know who they are. A special thank you goes out to the people in the Kalamazoo schools. Without their cooperation this study would not have been possible. I would also like to thank Krista Klein for planting the seed and helping to keep it watered when I was sure it was going to die. Without that gesture I'm sure I would not have grown. I thank Dulcie Kennie for being there to listen when I really needed to talk. I am grateful to my committee, Dr. Nickola Nelson, Dr. Michael Clark, and Dr. George Haus. I thank them for their honest feedback, challenging questions, and wonderful suggestions. I am also thankful for the encouragement my Mother and Father offered me.

Finally, I am extremely grateful to Bill Mullee whose presence in my life has helped me believe that no challenge is too great and that I can and will succeed. To him I dedicate this thesis.

Diane T. Hardy
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Language skills of adolescents with emotional disorders

Hardy, Diane T., M.A.
Western Michigan University, 1993
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CHAPTER I

INTRODUCTION

Statement of Problem

Adolescence is often referred to as the period of time between childhood and adulthood in which development occurs in three major areas of one's life: physical, emotional, and intellectual (Hartzell, 1984). Such changes create challenges for adolescents to adapt to the environment around them while developing as individuals with individual beliefs. Communicative competence is defined by Audet and Hummel (1990) as one's "ability to use language as a tool to effectively interact with others in social contexts" (p. 61).

Social interaction and communication are impeded when adolescents exhibit language disorders. For example, intense communicative challenges may lead to frustration, anxiety, and even anger on the part of adolescents with disorders. Doherty and Hummel (1990) believed that such feelings, if unmodulated, "fragment concentration and disorganize thinking, leading to communication failures .... and a tendency to take thought in action rather than words" (p. 40). The action taken may be a physical confrontation or an emotional breakdown. Repeated occurrence of such actions may lead to a diagnosis of a behavior and/or emotional disorder.
Behavior and/or emotional disorders are found often to have interchangeable definitions. Hardman, Drew, and Egan (1987) use the term behavior disorder to describe "persons with internal (emotional) and external (social) problems" (p. 102). Serious emotional disturbance was defined in conjunction with Public Law 94-142 (Federal Register, 1977, p. 42478) as follows:

(i) A condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance:
(A) An inability to learn which cannot be explained by intellectual, sensory, or health factors;
(B) An inability to build or maintain satisfactory relationships with peers and teachers;
(C) Inappropriate types of behavior or feelings under normal circumstances;
(D) A general pervasive mood of unhappiness or depression; or
(E) A tendency to develop physical symptoms or fears associated with personal or school problems.

Baker and Cantwell (1987) used the general term "psychiatric disorder" to refer to emotional/behavioral disturbance. They defined it as "a disorder of behavior, emotions, or relationships that is sufficiently severe and/or sufficiently prolonged, to cause disturbance in the child or disruption of his immediate environment" (p. 193). Baker and Cantwell (1987) then separated the definition into two main subgroups: behavior disorders and emotional disorders. According to Baker and Cantwell, a behavior disorder includes aggressive behaviors, such as violent outbursts or
argumentativeness, which disturb the environment and surrounding people. An emotional disorder includes internal disorders, such as depression or anxiety disorders, which affect the individual but typically do not disturb the surrounding environment.

The Michigan State Board of Education (1986) uses the definition established by the regulations published for implementing PL 94-142. Therefore, the subjects used in this study have been identified in compliance with this definition of emotional impairment. The titles emotional disorder and behavior disorder are not used interchangeably in this text. The term "emotionally impaired" may be assumed to identify subjects who have been identified according to the guidelines established by the Michigan State Board of Education.

Statement of Hypothesis

Adolescents with emotional disorders significant enough to justify placement in a program for emotionally impaired students may have a higher prevalence of recognized and unrecognized communication disorders than the general population. In fact, the available studies of adolescents with psychiatric disorders have shown high levels of association between communication disorders and emotional and behavioral disorders (Audet & Hummel, 1990; Baker & Cantwell, 1987; Prizant & Wetherby, 1990). What has not been fully investigated is the nature of the language difficulties.
The present study was designed to investigate further the association between emotional impairments and communication disorders. Ten emotionally impaired adolescents and ten adolescents in a control group matched for age, sex, and gender were screened for the presence of language disorders using the Screening Test of Adolescent Language (STAL; Prather, Breecher, Stafford, & Wallace, 1980). Specific language feature counts were gathered for a set of variables in oral language narration samples. These features included: (a) usage of adjectives, (b) usage of adverbs, (c) usage of conjunctions, (d) usage of prepositions, (e) presence of omitted words, (f) usage of secondary verbs, (g) usage of empty words, (h) recall of events, (i) mean length of utterance (MLU), and (j) type token ratio. The scores were then compared between the two groups.

This study specifically addressed the following questions:

1. Do adolescents with emotional impairments differ significantly from peers without identified impairments on standardized language measures of: (a) vocabulary, (b) auditory memory, (c) language processing, and (d) proverb explanation?

2. Do adolescents with emotional impairments exhibit measurable language differences when performing a spontaneous expressive language task (i.e., narrating a cartoon)? More specifically are there differences in the frequency in which they use adjectives, adverbs,
prepositions, conjunctions, secondary verbs, and empty words? Or a difference in their mean length of utterance, type token ratio, number of words used, and number of events identified?
CHAPTER II

REVIEW OF LITERATURE

Communicative disabilities are believed to affect, in varying degrees, approximately 10% of the population (Panel on Communicative Disorders, 1979). Emotional disorders are also estimated to appear in approximately 10-15% of the general population (President's Commission on Mental Health, 1978). Recent studies have indicated that the co-occurrence of these disorders is believed to be higher than originally estimated. Baker and Cantwell (1982b) studied the clients attending a community speech clinic in Los Angeles and discovered that "50% of children and adolescents with communication disorders had co-existing psychological or behavioral disorders" (p.18). Baltaxe and Simmons (1990) tested emotionally impaired children and adolescents admitted to the Neuropsychiatric Institute of UCLA and discovered that 63% demonstrated communicative disabilities. These statistics indicate that there is a high prevalence of emotional and/or psychological disorders coexisting with communication disorders.

This chapter includes discussion of the dynamics of language and social-emotional development. In addition, implications that disorders in either area may have upon adolescents are considered.
Language Development and Emotional Disorders

Communicative competence is defined by Audet and Hummel (1990) as one's "ability to use language as a tool to effectively interact with others in social contexts" (p. 61). To be communicatively competent, a child must experience proper language development and learn to use the rules of language and pragmatic regulations to build relationships with peers and caretakers. Language competence, which enables one to obtain information about distant events, including information about why needs or wants may not be met, in turn, leads to "emotional regulation" (Cicchetti, 1989).

Tronick (1989) hypothesized that an infant's earliest expressions may serve as communication signals that function to regulate emotional arousal. Communication skill is also believed to enable a child "to use internal language to reflect, solve problems, anticipate, and plan" (Prizant & Wetherby, 1990, p. 1). Prizant and Wetherby further commented that language acquisition helps to regulate others' behaviors through social exchanges. Audet and Hummel (1990) added that "mutual regulation allows a child to regulate communication interactions involving events and individuals in his/her environment. This requires the use of language to repair communication breakdowns, protest, negotiate, and solve problems" (p. 57).

Mutual regulations take place early in life through imaginative play, and language helps children connect
to their peers in play. Children's ability to interact with others and expand their social networks is believed to affect self-esteem, self-efficacy, and self-image (Cicchetti, 1989). Baker and Cantwell (1982a) pointed out that "the child who cannot participate in this group make-believe play is at a serious disadvantage in making social contacts" (p. 288). Some children who have difficulties participating in interactions are more likely to develop socially unacceptable means of communicating such as aggression towards others or self abuse (Theadore, Maher, & Prizant, 1990). Behaviors such as these may result in children being identified as exhibiting emotional disorders.

Lewis (1977) argued that "in providing the child with a means to put his or her feelings into words, language enhances the child's mastery over feelings and allows greater energy for cognitive growth" (p. 659). Evidence obtained by Baker and Cantwell (1987) indicates that there is a high likelihood of children with language disorders developing learning problems. When viewed from the other side, children with learning disabilities are at risk for psychiatric disorders. It is believed that this factor may be one link in the explanatory chain showing why children with language problems have high rates of psychopathology. Language has also been thought to be important in development of humor, recall and memory, and particularly important in learning to read
(Baker & Cantwell, 1982a). These are skills that may be positively related to mental health.

Prizant and Wetherby (1990) stated that infants interpret cues from others in deciding how to deal with stress. They noted that children who have been raised by depressed adults or have been maltreated "typically demonstrate a blunting of affective display or limited responsivity to affective expressions of others" (p. 10). Greenspan (1988) added that "delayed or at risk children face a number of barriers to emotional growth due to developmental limitations and maladaptive caregiver interactive styles" (p. 10). Children who do not respond to others or who have difficulty expressing themselves do not have the capacity to initiate and/or maintain play and, therefore, are less likely to establish positive peer relationships.

Language appears to play a role in building relationships, regulating emotions, expanding social networks, facilitating cognitive growth and positive development of mental health, and perhaps most importantly, assisting emotional growth. A deficiency in language development may lead to loss of the aforementioned qualities which may result in decreased peer relations and social, emotional and/or behavioral disorders. Baker and Cantwell (1977) state that "peer relationships have been shown to be the single most important prognostic factor in the long-term outcome of children with emotional disorders" (p. 589).
Adolescents at Risk

Griffiths (1969) commented that "the psychiatric problems of language-disturbed children are long lasting and pervasive" (p. 49). She studied children with developmental aphasia after a period of therapy and found "that while many of the children had apparently 'caught up' in social development, there was still considerable evidence of maladjustment" (p. 49-50). In their research, Beitchman, Nair, Clegg, Ferguson, and Patel (1986), found that children continuing to have speech and language problems to be more likely to show psychiatric problems when older.

Such studies imply that adolescents continuing to exhibit language disorders that originated earlier in childhood are in emotional danger. It is also believed that adolescents with language disorders acquired during adolescence are at risk for emotional problems. Baker and Cantwell (1977 & 1987) state that adolescents with language disorders are often "teased for being 'weird' ... and have difficulties with the subtle nuances of social interaction" (p. 158, 587). A language disorder may further hinder the social acceptance of adolescents by preventing "the learning of new slang and idiomatic expressions, and could interfere with these adolescents' understanding of jokes, puns, and sarcastic remarks" (Donahue & Bryan, 1984, p. 13). Characteristics such as these affect peer acceptance among adolescents and, as stated before, this is believed to be the single most
important prognostic factor in the outcome of emotional disorders. The problem is exacerbated because, as Donahue and Bryan (1984) note, adolescence is "a developmental phase during which failure to conform to peer group norms for appropriate language use may have increasingly negative consequences" (p. 18).

Social-Emotional Development

Social competence is defined, in part, by Hazel, Sherman, Schumaker, and Sheldon (1985) as entailing "the ability to accurately perceive the other person's verbal and nonverbal cues and adjust one's behavior based on those cues" (p. 15). Audet and Hummel (1990) added that "many aspects of social competence and communicative competence are closely related" (p. 60). If children or adolescents wish to be socially accepted by peers, they must be able to communicate effectively with those peers. Popularity is affected by social abilities which "involves the ability to initiate and participate appropriately in conversation" (Donahue & Bryan, 1984, p. 13). Donahue and Bryan (1984) add that "unpopularity" results from events, such as talkativeness, which indicate that the rules governing conversation are unknown to the speaker (p. 13). This evidence, as Schery (1985) also found, indicates that "incidence of social-emotional problems corresponds to a lack of progress in language acquisition" (p. 78).
Gresham (1986) suggested that an individual may be emotionally prevented from learning or using particular skills. Hazel and Schumaker (1988) commented that individuals who are not socially competent "are at greater risk for future problems such as juvenile delinquency, mental health problems in adulthood, and dropping out of school" (p. 32).

Co-Occurrence of Language and Emotional Disorders

Baker and Cantwell's (1982a) study indicated that "one of the most important factors for the development of psychiatric illness is the presence of language impairment" (p. 303). The most common type of language impairment found was an impairment in the comprehension or processing of language. Baker and Cantwell further indicated that emotional disorders were the most common psychiatric disorder found among language impaired individuals. Fifty-three percent of purely language-disordered children involved in their study were found to exhibit emotional disorders. Wing (1969) conducted a parental interview which indicated that parents feel their children with language disorders also experience problems in social situations, including lack of play, and often engage in socially embarrassing behavior, such as temper tantrums.

The above mentioned factors all suggest a high incidence of the co-occurrence of language and emotional disorders in a single individual. This is supported by
the findings of Cantwell, Baker, and Mattison (1980) which compared psychiatrically ill and psychiatrically well children and found that "psychiatric illness correlated more strongly with the type and severity of speech or language problem than with any other factor considered" (p. 424).

Summary

Language and emotional development begin in infancy and are, therefore, at risk for impairment at a very early age. Disorders in language may increase the level of frustration a child experiences and be a factor in impairment of emotional development. This lack of emotional development may have long, persistent effects that carry into adolescence. The adolescent may use aggressive or passive actions to convey meaning because verbal communication has failed. These adolescents are often labelled emotionally impaired. Baker and Cantwell's (1982b) studies have indicated a high incidence of language and emotional impairments co-occurring.
CHAPTER III

METHOD

Subjects

The experimental group in this study consisted of 10 male adolescents between the ages of 13 and 17 years (X=15;5) who qualified for special education services as having emotional impairments (EI). The individuals were willing participants who granted assent for participation (in addition to parental consent). All of the subjects were male caucasians who had been formally identified as emotionally impaired, all had current Individualized Education Plans (IEP) under the supervision of the participating school district, and all of them were without a history of placement in a juvenile detention home.

The control group consisted of high school and middle school male caucasian students with a mean age of 15;4, who have had no history of speech-language-hearing disorders, learning disability, or other conditions necessitating special education referral or service. The subjects were of similar age, race, and socioeconomic status to the experimental group subjects. Socioeconomic status was determined by implementing the Occupational Status Index (Stevens & Featherman, 1981).
Administrators of the subjects' programs were given a list of criteria for subject selection and copies of legal guardian permission letters and student assent letters. They were requested to distribute permission letters to legal guardians of potential subjects. The experimenter was given names of subjects only after permission was granted.

The parents of potential subjects from the EI rosters were introduced to the study by administrators or teachers of the cooperating school district when considered appropriate. All 13-17 year olds who, because of emotional impairments, were placed in special education classrooms (full or part-time) or who were receiving other special education services for emotional impairment in the cooperating school district were considered to be potential subjects. Special education coordinators had the option of not approaching any families when they believed it might be detrimental to do so.

Prior to administration of the protocols, a questionnaire was filled out by each subject. Any subjects who were uncomfortable with testing were allowed to leave at any time or to withhold information they did not wish to share. One subject in the emotionally impaired group expressed sensitivity about being audio taped. He, therefore, declined recording of a language sample. Two subjects within the EI group had spent time in juvenile detention homes for behavioral problems. These subjects were eliminated from the study.
The total evaluation took 20-30 minutes. Subjects' names were coded and are known only to the experimenter and the faculty advisor. Results from the protocols were used in this study only, and were kept confidential (with the exception of test scores being made available for the inclusion in the experimental subject's confidential files). Information related to subject identity was destroyed upon completion of this project. Reports of results of this study do not identify the individual subjects by name or description.

No adverse effects were anticipated for any of the experimental procedures of this study. Privacy rights were carefully protected and care was taken to schedule testing in conjunction with teachers to be nondisruptive.

Apparatus and Procedure

**Video Narration (Dollaghan, Campbell, & Tomlin, 1990)**

Subjects narrated a 108 second video of a black and white, silent cartoon about a fish who escapes havoc. Each event lasted no longer than seven seconds. Subjects first viewed the video tape to become familiar with it; then they viewed it a second time. The tester introduced the videotape by saying:

*Now I'm going to show you a short cartoon. You are going to watch it two times. The first time, I just want you to watch it. Don't say anything. Just watch the cartoon.*
The second time, the subjects were asked to narrate the events of the cartoon on-line. The tester said, "Now you're going to watch the cartoon again. But this time, I want you to tell me everything you see happening on the cartoon, right when it happens. Tell me everything you see happening on the cartoon." Following the final event of the cartoon, the subjects were asked to predict the outcome. The tester asked, "What do you think happened?"

The narration was audio taped and transcribed using Systematic Analysis of Language Transcripts (SALT) (Miller & Chapman, 1986). The adjectives, adverbs, conjunctions, secondary verbs, prepositions, empty words, omitted words, and positive or negative ending were coded on SALT. Positive and/or negative ending was determined by the presence of a "happy" ending, in which the fish lives and/or escapes, and a "tragic" ending in which the fish dies. SALT was also used to determine the different types of conjunctions used, mean length of utterance, total number of words, and total number of different words. Thirty-six events were determined by Dollaghan, Campbell, & Tomlin (1980) to be significant within the video. A check sheet of these events was developed (see Appendix A), and the presence or absence of each event was determined by careful examination of the acquired language sample.

Coder accuracy was achieved by using independent proofreaders. After initial coding, second and third passes were made by two judges. The judges were a
qualified graduate student and a faculty advisor. Inter-rater reliability was ensured for determining the amount of significant events mentioned by two graduate students reviewing the same language samples from three subjects in each group. The number of agreements was divided by the number of agreements plus disagreements (total number possible) and multiplied by 100. This procedure determined a reliability of 83%.

Screening Test of Adolescent Language (STAL) (Prather, Breecher, Stafford, & Wallace, 1980)

The STAL is a screening tool which assesses receptive and expressive language skills of adolescents. The test contains 23 items, and the total test administration requires 10-15 minutes. The STAL assesses the areas of (a) vocabulary—understanding of word meaning and substitution of a synonym in a grammatically correct form (e.g., They annoy him; give another word for annoy); (b) auditory memory span—repetition of a sentence in its original syntactical form (e.g., The fire drill that we had last week turned out to be the real thing); (c) language processing—comprehension of sentences and isolation of the absurdity contained therein (e.g., I went with my sister to the shoe store to buy a pair of combat boots to wear to the Junior Prom); and (d) proverb explanation—comprehension and interpretation of proverbs (e.g., Practice makes perfect) (Prather et al., 1980). The subjects were given directions as indicated by the STAL.
manual. If the subject responded with, "I don't know," they were encouraged to "have a guess." If this did not produce a response, a zero was given.

Inter-rater reliability was ensured by two graduate students being present for examination of three different subjects from both the research and control groups and simultaneously marking responses. The same reliability method was implemented as used for determining the number of significant events. A reliability rating of 95% was determined.

Hearing Screening

A pure tone audiometric screening was administered using a Kay Audiometer. The following tones were presented at 20 dB: 500 Hz, 1000 Hz, 2000 Hz, and 4000 Hz. Subjects were instructed to, "Raise your right hand when you hear a sound in your right ear, and raise your left hand when you hear a sound in your left ear." Total screening time was 5-10 minutes. If there was interference or if background noise was apparent, the subjects often did not respond to the 500 Hz frequency but still passed the hearing screening. Failure of hearing screening would have resulted in the subject being removed from the study. No failures were encountered.
CHAPTER IV

RESULTS

The purpose of this chapter is to discuss the findings of the study. The results are organized under two general headings: informal narrative language sample, which includes information gathered from the video narration, and formal language assessment, which indicates the results of the Screening Test of Adolescent Language (STAL; Prather, Breecher, Stafford, & Wallace, 1980).

The data were analyzed by performing a series of t-tests using Statistical Analysis System (SAS; SAS Institute Inc., 1985). These analyses indicated significant differences in several areas between scores for students in the emotionally impaired group and the control group, although no significant differences were found in most areas. The results are found below.

Informal Narrative Language Sample

Results from the informal narrative of the cartoon video appear in Table 1. These data indicate that significant differences appeared between the two groups only in the area of number of events ($t=2.83$, $df=16.80$, $p=0.01$). That is, subjects with emotional impairments spoke of fewer significant events in their narration than those subjects in the control group.
### Table 1
Narrative Sample Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>EI</th>
<th>SD</th>
<th>SE</th>
<th>Control</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Utt.</td>
<td>36.2</td>
<td>12.1</td>
<td>4.0</td>
<td>35.8</td>
<td>10.6</td>
<td>3.3</td>
<td>-0.08</td>
<td>0.93</td>
</tr>
<tr>
<td>MLU</td>
<td>7.3</td>
<td>1.1</td>
<td>0.4</td>
<td>7.8</td>
<td>2.3</td>
<td>0.7</td>
<td>0.61</td>
<td>0.55</td>
</tr>
<tr>
<td>Diff. Wds.</td>
<td>74.9</td>
<td>17.9</td>
<td>5.8</td>
<td>73.1</td>
<td>18.6</td>
<td>5.9</td>
<td>-0.22</td>
<td>0.83</td>
</tr>
<tr>
<td>Total Wds.</td>
<td>213.0</td>
<td>62.6</td>
<td>20.9</td>
<td>221.0</td>
<td>71.3</td>
<td>22.5</td>
<td>0.25</td>
<td>0.81</td>
</tr>
<tr>
<td>Total Cj.</td>
<td>15.3</td>
<td>8.0</td>
<td>2.7</td>
<td>17.6</td>
<td>15.3</td>
<td>4.8</td>
<td>0.40</td>
<td>0.70</td>
</tr>
<tr>
<td>Type Cj.</td>
<td>3.2</td>
<td>0.8</td>
<td>0.3</td>
<td>3.1</td>
<td>1.7</td>
<td>0.5</td>
<td>-0.19</td>
<td>0.85</td>
</tr>
<tr>
<td>Omit Wds.</td>
<td>10.1</td>
<td>11.3</td>
<td>3.7</td>
<td>12.6</td>
<td>13.2</td>
<td>4.2</td>
<td>0.44</td>
<td>0.67</td>
</tr>
<tr>
<td>Sec. Verbs</td>
<td>4.9</td>
<td>2.9</td>
<td>1.0</td>
<td>5.7</td>
<td>3.3</td>
<td>1.0</td>
<td>0.57</td>
<td>0.58</td>
</tr>
<tr>
<td>Adj.</td>
<td>10.9</td>
<td>5.7</td>
<td>1.9</td>
<td>12.6</td>
<td>10.0</td>
<td>3.2</td>
<td>0.45</td>
<td>0.66</td>
</tr>
<tr>
<td>Adv.</td>
<td>16.0</td>
<td>7.9</td>
<td>2.6</td>
<td>18.2</td>
<td>7.4</td>
<td>2.3</td>
<td>0.63</td>
<td>0.54</td>
</tr>
<tr>
<td>Pr.</td>
<td>20.6</td>
<td>7.7</td>
<td>2.6</td>
<td>16.4</td>
<td>8.9</td>
<td>2.8</td>
<td>-1.08</td>
<td>0.29</td>
</tr>
<tr>
<td>Empty Wds.</td>
<td>2.2</td>
<td>2.6</td>
<td>0.9</td>
<td>1.7</td>
<td>3.3</td>
<td>1.1</td>
<td>-0.38</td>
<td>0.71</td>
</tr>
<tr>
<td>Events</td>
<td>17.2</td>
<td>4.6</td>
<td>1.5</td>
<td>24.1</td>
<td>5.8</td>
<td>1.8</td>
<td>2.83</td>
<td>0.01*</td>
</tr>
</tbody>
</table>

Wds. = words, Utt. = utterance, Cj. = conjunction, Sec. = secondary, Adj. = adjectives, Adv. = adverbs, Pr. = preposition, MLU = mean length of utterance, *= significant at .01 level.

Significant differences were not found in the other targeted areas. These areas included usage of adverbs, adjectives, conjunctions, prepositions, empty words, and secondary verbs, mean length of utterance, total number of utterances, total words used, total number of different words used, and different types of conjunctions used.
Formal Language Assessment

The t-test results obtained by comparing scores for the two groups on the STAL are reported in Table 2. These results indicate that, although differences between the EI and control group scores were not significant for any of the individual subtests, the total score obtained indicated that the EI adolescents scored significantly lower ($t=2.65$, $df=16.50$, $p=0.02$) than the control adolescents. However, the mean of the EI groups total score, 17.1, is still a passing score for the STAL.

Table 2
Screening Test of Adolescent Language Results

<table>
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<tr>
<th>Subtest</th>
<th>EI</th>
<th>SD</th>
<th>SE</th>
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<th>SD</th>
<th>SE</th>
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<td>.4</td>
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<td>.07</td>
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<td>.9</td>
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<td>.09</td>
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<tr>
<td>Total Score</td>
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<td>20.2</td>
<td>2.4</td>
<td>.8</td>
<td>2.7</td>
<td>.02*</td>
</tr>
</tbody>
</table>

$\bar{X}$=mean, $SD$=standard deviation, $SE$=standard error, EI=emotionally impaired, *Significant at the $p<.05$ level.
In summary, no significant differences were found in any of the N variables measured in transcription of the cartoon narration samples. The only cartoon narration variable on which the control group scored significantly higher than the EI group was in the areas of number of events reported. Significant difference between the two groups were found when total scores on the STAL were compared. The qualitative differences and implications of these results will be discussed in Chapter V.
CHAPTER V

DISCUSSION

This final chapter includes discussion of the results identified in the previous chapter and their implications. Those results indicate a significant difference between the EI group and the control group in only two of the language areas studied: (1) number of events mentioned during cartoon narration, and (2) the total score for the Screening Test of Adolescent Language (STAL; Prather, Breecher, Stafford, & Wallace, 1980).

Potential Explanation for Observed Differences

The observation that adolescents with emotional impairments neglected to mention many significant events when narrating the video is difficult to explain. It is particularly interesting, however, because it stands out so noticeably against all of the other areas in which the narrative samples were so similar. For example, the lack of significant difference in number of words used by the two groups suggests that sample sizes were similar. This means that the differences in number of events produced cannot be explained by a slower speaking rate or more hesitant narrative style.

Another possible explanation for the differences may have been difficulty identifying nonverbal emotional...
There were two events within the video that were related to interpretation of emotions. The emotionally impaired subjects missed more of one of these events than the control group, however, only one event (crab taken aback) was omitted frequently (5 less occurrences) in comparison to the control group. Several other events were omitted by the adolescents with emotional impairments with notable frequency; however, these were concrete, obvious events that did not require interpretation of emotion. These data do not support the explanation that differences in number of events may have been due to difficulty in identifying primarily nonverbal emotions by individuals with emotional impairments.

A third possible explanation is that the students emotional states at the time of testing may have influenced their tendencies to omit events from their narrations. Doherty and Hummel (1990) have indicated that communicative challenges may lead to frustration and anxiety on the part of the adolescents with disorders. They believed that if these feelings cannot be overcome they may result in "fragmented concentration and disorganized thinking, leading to communication failures" (p. 40). The narration attempts of the EI group in this study cannot be categorized as "failures," but they were lacking in identification and discussion of significant events. This may be an indication that the subjects may be affected by other learning problems.
Failure to mention significant events may relate to a lack of attention to detail that could also interfere with discussion of books, articles, and other reading and/or viewing materials. These are all tasks that are required in many high school curricula. Baker and Cantwell (1987) have indicated that children with language disorders are at risk for developing learning problems.

In this study the pragmatic abilities of the EI students were not assessed directly in social interaction context. Therefore, the possibility that students exhibited pragmatic language deficiencies could not be ruled out. Pragmatics is important for the organization of language. It is within the normal functioning of this area that important and unimportant events are identified and worthiness of discussion is determined. The significant reduction in report of events may represent a more general problem in identifying significant events and in meeting informational needs of listeners.

The second area in which significant differences appeared between the language skills of students with EI and the control group is total score on the STAL. The data indicated that the control group scored significantly higher (X=20.2) than the EI group (X=17.1, p=.02) on the total STAL score. A total score of 23 was possible on this test over all four subtests. Although no significant differences were found for any of the subtest scores on the STAL, two subtests seemed to
contribute more to the overall difference. These were the Vocabulary subtest and the Proverb Explanation subtest. The Auditory Memory and Language Processing subtests were quite similar for the two groups.

A significant research result does not, however, necessarily represent a significant clinical result. That is, the lowest total score required to pass the STAL is 13 correct responses. The mean of the EI group exceeded this score considerably. This indicates that although the control group scored significantly higher than the EI group on this formal language screening test, they are both within the normal limits of functioning for their age in the items screened.

The STAL may be a useful screening tool for students with emotional impairments, but only if the cut-off scores are fine-tuned. Perhaps the publisher could consider gathering additional normative data for various population subgroups.

Conclusions

A primary question motivating this study was whether adolescents with emotional impairments differ significantly from peers without identified impairments on standardized language measures. The answer to this question, which was proposed at the beginning of this study, appears to be "yes." As indicated, the EI group scored lower on the STAL than the control group. That is, on this multi-component language test, even though both
groups scored within normal limits, significant advantages were found for the students with no disabilities, as compared with the students with emotional impairments.

The second proposed question addressed whether adolescents with emotional impairments would exhibit measurable language differences when performing a spontaneous expressive language task. This question can also be answered with a qualified "yes," but only in one area. The results indicated that in the area of identifying and speaking of significant events, the EI group scored lower than the control group. Significant differences were not found in any of the other areas examined: use of adjectives, adverbs, conjunctions, prepositions, empty words, and secondary verbs, as well as mean length of utterance, different types of conjunctions, type token ratio, and total number of words used.

It is possible that the significant difference in event reporting may be only one part of a broader problem involving pragmatic skill. Pragmatic skills are known to play an important part in adolescents communicative effectiveness. Cicchetti (1989) indicated that pragmatic regulation leads to emotional regulation. If the adolescent is unable to regulate his/her language, such as picking out significant events, this may lead to communicative failure and may place the student at academic risk.
Implications for Further Study

It is believed that further study is needed in the area of the language abilities of adolescents with emotional impairments. A specific area indicated by this study, which needs further inquiry is pragmatic abilities. These abilities are needed in everyday communicative interactions. If adolescents are unable to organize their oral expression, determine their listeners needs, and identify which details are most important to communicate, they may "take thought into action rather than words" (Doherty and Hummel, 1990, p. 40). The problem may extend to reduced ability to express internal feelings and needs; thus leading the adolescents to go without desired emotional support.

To identify the nature of language differences for students with emotional impairments, more extensive testing would be needed. A screening instrument was used in this study. Although it is meant to indicate areas in need of further testing, it did not include enough subtests or items within subtests to identify all potential areas of difference.

The relatively small size of the subject groups may also have reduced the likelihood of finding significant differences in this study, most likely in formal language subtest scores. Most variables measured in the spontaneous narrative samples were, in fact, extremely similar for the two groups. Language form seems not to be the
area in which to look for differences. This result would not be likely to change even in a larger sample. Conversational samples, however, might yield additional evidence of difference.

The use of cartoon narration was an excellent tool for encouraging informal language for these students. The subjects responded positively to the task. It eliminated the need to ask personal questions to elicit a language sample, which may be awkward for both clinicians and clients. However, it is limited in its ability to detect pragmatic weaknesses.

Studies performed by other researchers (Baker & Cantwell, 1982b; Baltaxe & Simmons, 1990) have indicated that language impairments and emotional impairments co-occur. The present study indicated that some features of language impairment were present in adolescents with emotional impairments, but that many features of their spontaneous language did not differ. There is room and need for further study in this area. Pragmatic abilities were not tested directly in this study in social interaction contexts; yet these skills are important to effective communication. Perhaps the area of pragmatics plays the largest role in communicative disorders of children and/or adolescents with emotional impairments.

A number of other clinical questions arise from this study. For example, when co-occurrences are present, what is the role of the speech-language pathologist in remediation? Would these clients not benefit from a
clinician who is certified in speech-language pathology and psychology? Is this creating a new field of study? Could collaborative transdisciplinary service teams accomplish similar outcomes?

The answer to just these few questions could make the life of a troubled adolescent much more pleasant. It seems that while intervention from several professionals is helping some adolescents, many more receive inadequate help. In spite of demonstrating significantly lower language scores on a formal screening test, none of the adolescents in this study had received language intervention services from a speech-language pathologist. Exploring the means by which adolescents communicate with those around them and the effectiveness with which they understand the communication of others needs further study. Without help to comprehend abstract vocabulary, figurative language, and communicatively relevant details, adolescents with emotional impairments may have persistent, subtle language problems that interfere with their ability to benefit from other forms of treatment that use discourse. Ultimately, they may resort to alternate, unacceptable ways of conveying meaning. Although general competence in language fluency and verbal output seemed to be intact for most of the students, those skills may mask more subtle semantic and discourse deficits. Intervention and further study is needed.
Appendix A
Utilized Forms
EVENTS OF VIDEO TAPE

Event #  Event
---  ---
1  Fish appears
2  Crab appears and attacks fish
3  Crab alone
4  Snail crawling
5  Crab taken aback
6  Snail crawling
7  Fish peers back
8  Crab looks
9  Snail continues
10  Shell lost
11  Snail continues
12  Crab climbs down
13  Fish relieved
14  Crab confronts fish
15  Crab attacks fish
16  Fish escapes
17  Fish meets eyes
18  Eyes come out
19  Crab attacks fish
20  Fish escapes
21  Fish escapes pike
22  Crab attacks fish
23  Pike chases fish
24  Pike chases fish
25  Two enter hatch
26  Both gone
27  Pike gets stuck
28  Pike escapes
29  Fish into sponges
30  Pike into sponges
31  Pike looks for fish
32  Bubbles rise
33  Pike rises
34  Pike circles
35  Pike opens
36  Pike and crab attack fish

Comments:

---

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Dear Parent/Legal Guardian,

I would like your permission to ask your child to participate in my research project through Western Michigan University. It is a study of the hearing and language abilities of adolescents with and without special needs.

If you give permission for your adolescent to participate in this study, your child will receive a free language, speech, and hearing screening. He or she will be asked to:

1. Talk about a 2 minute cartoon video;
2. Take a hearing screening test;
3. Take a 10 minute test which uses language to assess a series of questions.

It will take 20-30 minutes. It will be finished in one session. Your child will earn no special service from any educational agency or from WMU. Participation is voluntary and your adolescent may withdraw from the study at any time without penalty (refusal to participate will not endanger any current or future relationship with any education agency or WMU). Your child's file will be checked to confirm whether he/she had ever received special services (if so, the type of services will be recorded).

The identity of your child will be kept secret during the study and after it. Any audiotapes used will be destroyed. A scientific paper will be written when the study is completed. Results from this study may be presented at educational conferences and published in scholarly journals, but no names will be used.

You will also be notified if there is any concern about your child's language, speech, or hearing development. If you have questions about the results, contact me, Diane Hardy, at (616) 383-6176, or my faculty supervisor, Dr. Nelson, at (616) 387-8058.
Please return the attached permission form to the school by ____________________. Thank you for your time, cooperation and consideration.

Sincerely,

Diane T. Hardy
Graduate Student of Speech-Language Pathology

Krista J. Klein
Graduate Student of Speech-Language Pathology

Nickola W. Nelson
Ph.D. CCC-SLP
Western Michigan University
Faculty Advisor

I have read and understand the attached letter. I understand that I have the right to withdraw my child from this study and that my child has the right to withdraw from this study at any time. I also understand that this research project is being done by a graduate student with supervision, and that this student will have access to my child's records for review but not for copying.

Please mark one and sign.

/ / As a legal guardian of ________________________, I give my permission for him/her to participate in this study.

/ / I would like more information.

Signature of legal guardian ___________________________ Witness ___________________________

Date ____________ Date ____________

Birth date of student: Month ____ Day ____ Year ____

Is the student: White ____ Black ____ Asian ____ Hispanic ____

Native American ____ Bi-racial ____ Multi-racial ____

Please explain if bi-racial or multi-racial.
I am willing to be part of a research project. I understand that the project has several parts:

1. I will talk about a video cartoon and be audio-taped;
2. I will take part in a 10 minute screening test of language;
3. My hearing will be tested;

I understand that the results of this project will be placed in my confidential file. I know that the results of this project will be used only in this study, and that my name not be used. I can ask for help for any language, speech, or hearing problem that might show up.

I know that I can decide to quit at any time and have it be O.K.

Signature  
Printed Name

Witness Signature  
(Date)
(required if adolescent needs help understanding language on the form)
Please answer the following questions the best you can. All information will be kept confidential.

1. When is your birthday? Month___ Day___ Year____

2. Are you: White___ Black___ Asian___ Hispanic___
   Native American___ Bi-racial___ Multi-racial___
   Please explain if bi-racial or multi-racial

3. Are you: Male____ Female____

4. Please list:
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<th>Relationship of people who live at your permanent home (ex. mom, grandma, uncle, cousin, aunt)</th>
<th>Age</th>
<th>Highest year of school completed</th>
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Graduate Programs Accredited by Educational Standards Board, American Speech-Language-Hearing Association

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FEEDBACK FORM
LANGUAGE AND HEARING RESEARCH PROJECT
Western Michigan University
Department of Speech-Language Pathology and Audiology

TEST SITE: ________________________________
NAME: __________________________________
DATE: ________________________________
ADMINISTERED TESTS:
- Screening Test of Adolescent Language (STAL)
- Language sample (video narration)
- Hearing Screening
- Other explain:

CONCERNS:
Speech:
  _ no concern __________________
  _ possible concern (see information given below)
  _ voice ________________________
    _ hypernasal
    _ denasal
    _ breathy
    _ harsh
    _ low pitch
    _ high pitch
    _ other 
    _ explanation:
  _ articulation ____________________
    _ consonants
    _ vowels
    _ explanation:

Graduate Programs Accredited by Educational Standards Board, American Speech-Language-Hearing Association
Language:

___ Black Vernacular English
___ Standard English
___ Hispanic dialect
___ Other, explanation:

Areas of concern and explanation:

___ pragmatics
___ semantics
___ syntax
___ morphology
___ phonology

Hearing:

___ normal
___ abnormal
   explanation:

OTHER COMMENTS:

Signed____________________

____________________

Faculty____________________

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Appendix B

Subject Data
<table>
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<th>Subject Group</th>
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*Subject declined narration sample.
Subject Data-Continued

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Subject Data—Continued

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Utt. = utterance, MLU = mean length of utterance, Cj = conjunction, C = control group, ei = emotionally impaired group, p = positive ending, n = negative ending, STAL = Screening Test of Adolescent Language, Sec = secondary, Adj = adjective, Adv = adverb, Pr = preposition, Ew = empty word, Cj = conjunction
Appendix C

Human Subjects Institutional Review Board Approval
Date: May 29, 1992

To: Daine T. Hardy

From: Mary Anne Bunda, Chair

Re: HSIRB Project Number 92-05-12

This letter will serve as confirmation that your research protocol, "Language Skills of adolescents with emotional disorders" has been approved after full review by the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any change in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

xc: Nelson, Speech Pathology

Approval Termination: May 29, 1993
Appendix D

Language Samples
Narration of video.

C *A Crab/3s try/ing to get[Sv] the fish.

C Now the fish got in[Pr] a snail.

C And he/’s start/ing to walk[Sv] away[Adv] from[Pr] the crab.

C Now the fish is walk/ing underneath[Pr] a stick.

C And the shell just[Adv] got caught on[Pr] the crab.

C *A Crab climb/ed down[Pr].

C Now he/’s go/ing after[Pr] the fish.

C *A Crab try/3s a grab/ing[Sv] the fish again[Adv].

C The fish get/3s away[Adv].

C *A Crab/’s go/ing after[Pr] the fish again[Adv].

C Now he go/3s to swim[Sv] into[Pr] the shark/z[Adj] mouth.

C And then he get/3s away[Adv].


C Now the shark/’s swim/ing after[Pr] the fish.


C And now the shark/’s chase/ing him.


C Now the shark just[Adv] got out[Adv].


C And now the shark went after[Pr] him.

32 C The shark/’s swim/ing around[Pr] the bubble.
34 C *Sub Try/ing to pop[Sv] the bubble.
35 C He pop/ed the bubble.
36 E All right, now make up the ending for me.
Narration of cartoon video.

R *A Crab *Aux snap/ing at[Pr] the fish.

R The fish is try/ing to get[Sv] away[Adv].

R *A Fish is move/ing.

R The crab/'s still[Adv] snap/ing[Sv].

R *A Fish run/3s.

R *Sub Hide/3s under[Pr] a shell.

R *A Crab see/3s him.

R *Sub think/3s it/'s a snail.

R *A Fish turn/3s around[Pr].

R *A Crab *Aux look/ing at[Pr] him.

R *Sub Find/3s out it/'s the fish.

R But the fish keep/3s on[Pr] go/ing[Sv] under[Pr] the shell.


R The fish walk/3s underneath[Pr] it.

R *A Crab get/3s down[Pr].

R *A Crab see/3s the fish is out[Adv][Sv] of[Pr] the shell.

R *A Crab chase/3s him.

R *A Fish swim/3s away[Adv].

R *A Crab *Aux snap/ing at[Pr] him.

R *A Fish is move/ing.


R *A Crab see/3s him again[Adv].
30 R He's run/ing away[Adv] from[Pr] the crab.
31 R *Sub Run/3s into[Pr] a (shark/z mouth) new[Adj] shark/z[Adj]
32 R *A Crab fall/3s in[Pr] the shark/z[Adj] mouth.
33 R (Run through bo) *Sub run/3s by[Pr] an abandon/ed[Adj] ship.
34 R *Sub Go/3s (in uh) something[Ew] in[Pr] the (hole) hole in[Pr]
35 R *A Shark get/3s stuck.
36 R *A Fish swim/3s by.
37 R *A Shark get/3s unstuck.
38 R *Sub swim/3s back[Adv] toward[Pr] the fish.
39 R *A Fish hide/3s in[Pr] the coral.
40 R *A (Sh) shark find/3s him in[Pr] the coral.
41 R *A Fish hide/3s in[Pr] a bubble.
42 R *A Shark swim/3s around[Pr] him for[Pr] a while[Adv] and^ 
43 R This is stupid, geez.
46 R And pop.
47 E Okay, make up the ending for me.
48 R He die/3s[N].
1 $J$, Examiner
3 +1-26-93
4 +13;4,Con
5 +Narrative of cartoon video.
6 +Standard english
8 J Okay.
9 J The crab is attack/ing[Sv] the fish and it disappear/3s.
10 J *Sub Look/3s over there[Adv].
11 J *Sub See/3s a shell walk/ing[Sv].
12 J He/'s confuse/d.
13 J And he look/3s out[Adv] of[Pr] the shell at[Pr] the crab and 1 still[Adv]
14 can/'t figure it out[Adv].
15 J And then the shell get/3s stuck[Adv] on[Pr] a stick.
16 J And *Sub come/3s off[Pr].
17 J And the crab climb/3s off[Pr] the stick.
18 J And take/3s his shell off[Pr].
19 J *Sub Put/3s it back[Adv] on[Pr].
20 J And *Sub go/3s after[Pr] him again[Adv].
21 J And the fish swim/3s away[Adv].
22 J And he see/3s some eye/s.
23 J And he go/3s away[Adv].
25 J And then the crab is attacking[Sv] him again[Adv].
27 J And the crab do/3s.
29 J And they/'re go/ing[Sv] into[Pr] a boat.

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30 J And then they come out[Adv] the other end.
31 J And the larger[Adj] fish get/3s stuck[Adv].
32 J And he get/3s out[Adv].
33 J And he chase/3s him again[Adv].
34 J Then they both go into[Pr] some sponge/s or something[EW].
35 J He stick/3s his head out[Adv].
36 J And he/'s stuck again[Adv].
37 J And the fish is stuck in[Pr] a bubble.
38 J And the big[Adj] fish get/3s out[Adv].
39 J *Sub Go/3s up[Pr].
40 J *Sub Circle/3s around[Pr] him.
41 J *Sub Open/3s his mouth.
42 J The crab come/3s out[Adv].
43 J *Sub Attack/3s him.
44 J *Sub Pop/3s the bubble.
45 J And that/'s the end.
46 E Okay make up the ending to the story.
47 J (The fish) the little[Adj] fish swim/3s away[Adv].
48 J and the crab just keep/3s try/ing[Sv] to get[Sv] in[Pr].
49 J and finally[Adv] he give/3s up[Pr][H].
6 +Narrative of cartoon.
8 M I see the crab chasing the fish trying to catch it.
9 M The fish swims away.
10 M The crab chases it.
11 M Now the fish is xxx.
12 M (Um) The shell comes off.
13 M The fish isn't chasing it.
14 M *Sub Tips his hat to the fish.
15 M *Sub *Aux Trying to catch him.
16 M The fish gets away.
17 M *Sub Sees two eyes.
18 M And the crab is back.
19 M *Sub *Aux Trying to catch it again.
20 M *Sub Sees the shark.
21 M *Sub Gets swallowed by the shark, the crab.
22 M Now the shark's chasing the fish.
23 M *Sub Leads him to a tunnel.
24 M *Sub Comes out the other end.
25 M The shark gets stuck.
26 M *A Fish swims away.
27 M *A Shark *Aux unstuck.
28 M *Sub Goes into the seaweed.
29 M The fish is in the bubble.
30 M The shark sees him.
31 M *Sub Chases him.
32 M *Sub Swims around[Pr] him.
33 M He opens his mouth and the crab comes out[Adv].
34 M *Sub *Aux Tries to get[Sv] it.
35 M *Sub Pops the bubble.
36 E Okay, make up the ending to the story.
37 M The fish gets away[Adv][H].


