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The Nonuse of Figurative Language in Conduct Disordered Adolescents

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THE NONUSE OF FIGURATIVE LANGUAGE IN

CONDUCT DISORDERED ADOLESCENTS

by

Mike Berger

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of

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ABSTRACT

The Nonuse of Figurative Language in Conduct

Disordered Adolescents

by

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The relationship between the literal language and conduct problems among conduct disordered adolescents was examined in 109 subjects. The inability to use figurative language was found to be positively related to ratings of conduct problems. Both the parents' discipline style and nonuse of figurative language were related to conduct problems in conduct disordered adolescents. The possible role of other variables, for example, age, sex, and IQ, was examined. Possible mechanisms that could relate the lack of figurative competence and conduct problems were explored.

(107 pages)

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Thanks to the following:

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CHAPTER I

INTRODUCTION

This dissertation is about conduct disordered adolescents (CDA) and the way they think, talk, and behave. There are two types of CDAs, the socialized type and the solitary aggressive type. This study focuses on the latter type. This population of adolescents is of great interest because they consume so many of their families', schools', and society's resources. The primary behavior that separates this population from other troubled youths is their high levels of antisocial acts. Throughout this dissertation, CDA will stand for the solitary aggressive type. The reader may recognize the socialized type. The socialized types have well developed language and social skills. They "shuck and jive" with friends, listen to rap music, and act primarily in concert with others. Antisocial gang members are the best example of socialized CDAs. The solitary aggressive CDAs act alone. They are deficient in both language and social skills. Undersocialized CDAs have received great attention, and there is a voluminous literature that has proliferated over the past 20 years.

In spite of this vast knowledge, attempts to reduce the antisocial nature of the CDA's behavior have largely failed. Clinicians report that this is one of the most resistant populations to attempt remediation. Empirical research bears out these clinical observations. In a longitudinal study by the Oregon Social Learning Center and Oregon State University, the success rate of reducing antisocial behavior in CDAs was less than 15% (H. M. Walker, personal communication, May 1997.) It would appear that there is little understanding involving the great deal of information that exists about this type of CDA.

This dissertation is primarily about the way CDAs use language. They tend to use very direct literal language. One of the central questions addressed by this study is, does a relationship exist between the CDAs' literal language and their antisocial behavior? This is an exploratory study that attempts to provide new information about a little-researched aspect of CDA-- their style of language. This dearth of richer language form in solitary aggressive CDAs has been observed clinically. The observation has limited empirical support (Berger, 1998). Berger found in a pilot study that CDAs' language was devoid of figurative style. With the exception of some slang, their language contained little or no figurative expressions.

It is the contention of this dissertation that a potential source of explaining the CDAs' behavior problems lies in their underdeveloped and impoverished thinking and language skills. Their impoverished language skills lead to frustration and anger when they cannot understand normal conversation. They also develop poor social skills that may be caused or exacerbated by their language deficits. The fundamental premises of this study are (a) CDAs do not use figurative language, and (b) this lack of figurative ability affects the development of conduct problems.

The vast majority of people have come in contact with the formal concept of figurative language in their tenth-grade English class when they had the experience of trying to construct metaphors for creative writing essays. The fact is that figurative language is so much more. Metaphors, for example, are so pervasive and are developed so early in speech and thinking that they are obvious and therefore transparent. Metaphors are so subtly and inexorably woven into the tapestry of our language that they

go unnoticed. According to Grice (1975), the average adult English language speaker produces about two metaphors per minute. Figurative language may make up as much as 25% of normal conversation.

Two brief scenarios might prove to illustrate the point. First, a literal CDA is in the school cafeteria and this brief conversation takes place:

Bob: Ray, you look crummy.

Ray: I'm down; just bombed the math final.

Bob: That sucks! See ya round.

A metaphorically competent person would follow the conversation without difficulty. Imagine the literal CDA overhearing this conversation. He might infer: (a) Ray has been eating cookies, (b) he would like to know where it was that Ray was down, for example, downstairs? (c) he might also like to know what kind of explosives were used in the bombing, (d) he might wonder what kind of pump Bob used, and (e) he might want to know behind what Ray will be hiding, that is, Bob may see him around what?

Second, at home a young CDA child is confronted by a very literal speaking mother who demands, "Clean your room! Now!" At the dinner table he hears, "Eat your peas!" At bed time he hears, "Get into bed!" His mother goes off to a parenting class and comes home and attempts to interject a little civility into her drill-instructor demeanor. "Your room is a pig pen," she announces. After a steady diet of demands, the child, upon hearing this metaphor, may look around his room and wonder if his mother has been out in the sun too long.

Does this potential for miscommunication place this child at risk for becoming angry and alienated? Does the inability to comprehend figuratively create thinking errors and subsequent frustrations? Could the resulting frustrations nourish aggression? Could the accompanying alienation result in poor social skills and tendencies for the CDA to isolate himself? (Throughout this study, the male pronoun is used. It will, however, stand for both sexes.)

The research questions addressed by this study are:

1. Does the CDA use "literal speak," a very specific and literal language style devoid of figurative language?

2. What is unique about figurative language that it does not develop in this population as it does in normal adolescent populations?

3. Is this deficiency in richer language forms predictive of conduct problems?

CHAPTER II

REVIEW OF LITERATURE

Introduction

This review of literature attempts to juxtapose the extensive literature base dealing with CDAs and their style of direct literal language. In the review of the CDA literature, the following will be attempted: (a) give the reasons for excluding socialized CDA from this analysis; (b) define and give the characteristics of a undersocialized CDA; (c) examine the model developed by Patterson (1982) to explain the process by which a child develops CD characteristics. This model provides an empirical and theoretical base for linking CDA to the nonuse of figurative language; (d) explore the existing evidence that CDAs have communication difficulties; (e) explore the possibility that communication problems predate conduct problems in a developmental sequence. This would suggest the direction of any potential causal relationship; (f) list two clinical constructs, anger and poor social skills, that have been used to explain conduct problems. These two constructs are listed in order to provide a basis for developing mediating variables that may provide a way of relating CDAs to impoverished language and literal cognitive processes; (g) explain why metaphor was selected to represent the dozen figurative devices that make up figurative language; (h) tell why idioms were selected as a second measure of figurative ability; (i) define metaphor and give those characteristics that lend to its comprehension. These factors are listed because they may provide the basis for alternative hypotheses that might explain any relationship between CD

problems and lack of figurative ability; and (j) suggest that figurative ability is a

powerful cognitive tool for both problem solving and planning.

The Omission of Socialized Conduct Disordered
Adolescents from This Review

The distinction between socialized and undersocialized subtypes of conduct

disorders can be found in both clinical and empirical literatures. The American

Psychiatric Association (1987) in the Diagnostic and Statistical Manual III-Revised

(DSM III-R) lists both subtypes of the general clinical syndrome. Quay (1984) has also

identified the two similar subtypes in his empirical research. The socialized conduct

disordered adolescent tends to act in accordance with gang or group goals. The solitary

type tends to act on an individual basis. The socialized subtype of conduct disorder will

be omitted from this review. The rationale for this exclusion is based on both theoretical

considerations and empirical findings. The behaviors listed previously by Kazdin (1987)

typify both subtypes; however, the ordering of these behaviors differs markedly across

the subtypes. For example, Kazdin and Quay both identify poor impulse control as a

variable characterizing both solitary and socialized CDAs. In the solitary aggressive

subtype, poor impulse control and compliance problems are key variables accounting for

a great deal of the reliable variance in the factor structure of Quay's Revised Behavior

Checklist (RBC). According to Kazdin (1987), in the socialized type, poor impulse

control is a secondary factor, and in Quay's research, poor impulse control is minimally

related to the socialized subtype of conduct problems.

Patterson and Banks (1989) have suggested that the solitary subtype tends to act aggressively with little forethought. This pattern of behavior tends to alienate peers and adult caregivers. Socialized aggressive teens act in consort with others, and their actions are rarely impulsive, but tend to be premeditated. While the antisocial nature of each type is evident, the reasons for and the methods of their antisocial behavior differ markedly. The clinical literature suggests that other behaviors that are markedly different across the two subtypes include poor peer acceptance, adult related social skills, and poor impulse control. The socialized subtype teen acts out in response to group goals, normative structure, group cohesion, and so forth. Kazdin (1987) suggested that the appropriate methods of research with undersocialized conduct disordered adolescents is the analysis of individuals, while the study of group dynamics is the appropriate method of doing research with the socialized subgroup. The current study deals with language and its usage. One of the markers that sets apart the two types of CDAs is their level of socialization. It could be argued that these two groups are different enough across this factor to justify the exclusion of socialized CDAs from this study. From this point, when the acronym CDA is used, it will refer only to the undersocialized aggressive type of CDA.

A Definition of Conduct Disorders

There have been many attempts to define the subpopulation of conduct disordered children. This review samples four of those definitions. These four were chosen because they diverge in their methodologies in developing their definition. The four definitions

include those from the DSM-III-R (APA, 1987) developed largely by a committee of psychiatrists, the clinical work of Kazdin (1987), whose definition draws heavily on the clinical literature, the definition of Quay (1984), whose definition comes from the analysis of symptom checklists, and the definition of Patterson and Banks (1989), whose definition is based on analysis of videotaped interactions of conduct disordered adolescents.

The DSM-III-R (APA, 1987) gives the following criteria that must be met to have a diagnosis of conduct disorder, solitary aggressive type: (a) the child must have had conduct problems lasting at least 6 months; (b) the child acts without the influence of others, primarily gangs; and (c) the essential feature of the conduct problems is "the predominance of aggressive physical behavior." In addition, the child must meet at least three of the following criteria:

1.   Steals without physical confrontation.

2.   Runs away.

3.   Lies to avoid consequences.

4.   Sets fires.

5.   Is truant from school.

6.   Has engaged in burglary.

7.   Has engaged in vandalism.

8.   Has been cruel to animals.

9.   Has engaged in forced sexual activity.

10. Has used a weapon in fight(s).

11.   Starts fights.

12.   Steals with the aid of a weapon.

13.   Is physically cruel to people.

Kazdin (1987), writing in the clinical literature, defined the term conduct disorder as the instance when children or adolescents evidence a pattern of antisocial behavior, and this pattern of behavior results in a significant impairment in everyday functioning at home and/or school. This behavior pattern also has the primary characteristic of being unmanageable by significant others. Kazdin also identified seven attributes of the child with severe conduct problems. They are (a) aggression directed at peers, (b) defiance directed at adults, (c) poor peer and adult related social skills, (d) poor impulse control, (e) lack of empathy, (f) "here and now" orientation, and (g) academic failure.

Quay (1984) has done extensive analysis of questionnaires and symptom checklists. He has developed an empirically based symptom checklist that identifies children with conduct problems. The RBC is a widely used instrument for identifying adolescents with conduct problems. The RBC has an extensive literature and has well established reliabilities and validity. Interrater reliabilities are reported to be between .47 to .85. Validity with the single criterion measure, delinquency, was given as .42. The RBC contains 22 items that identify adolescents with conduct problems. The conduct problem items from this checklist can be grouped into five broad areas. They are (a) lack of compliance, (b) aggression, (c) selfcenteredness, (d) poor social skills, and (e) inappropriate attention seeking. Compliance problems are heavily weighted in Quay's problem checklist. Ten of the 22 items deal with compliance issues, for example,

disobedient, difficult to control. The next factor, aggression, contains only five items in the factor.

The fourth definition, that of Patterson and Banks (1989), is unique. Rather than listing a criterion that defines conduct problems, Patterson defines conduct disorders in terms of processes. The underlying assumption of this definition is that conduct problems are social in their development, namely, the conduct disordered adolescent is socialized into his role.

Patterson (1982) has characterized the development of conduct disorder as a minute-by-minute, second-by-second conditioning process that occurs within the family. Loeber and Dishion (1983) carried out an analysis of longitudinal studies of antisocial behavior. They extracted from their comparisons of conduct disordered versus normal children a large number of early antecedent variables that had some predictive power. Three variables seem to have the best predictive capacity and account for a majority of the experimental variance in their studies. The variables were (a) inconsistent parental discipline, (b) poor supervision, and (c) low family involvement. These variables consistently outperformed other important variables in predicting later delinquency and criminality. Based on earlier studies, Patterson and Reid (1984) have attempted to construct a social reinforcement model to explain the development of antisocial behavior. Their model is being tested in longitudinal studies currently in process. Their first year data are available, and these data support the model that begins with early development of oppositional behavior in a continuing pattern of socialization that leads to antisocial acts. Patterson and Reid argue persuasively that aggressive behavior patterns

are initially developed and subsequently maintained through the daily mutual coercive interactions between the parent and child.

The Patterson model (Patterson, 1982) suggests that young male children naturally produce a variety of aversive acts. The Patterson model deals only with young males. Not enough data have been generated to develop a model for female CDAs. According to the Patterson model, aversive acts occur once every 2 minutes when young CDA children are interacting with parents at home. The rate of these aversive acts, however, consistently covaries with the rate of parents' harsh or irritable discipline. The child's rate of aversive behavior tends to increase exponentially as the rate of "coercive interactions" by parents increases. According to the Patterson model, male children with the tendency to act out or externalize reciprocate their parent's behavior. They develop a series of countercoercive behaviors that are started and maintained by a negative reinforcement process. That is, the cessation of the parents' aversive discipline reinforces the child's "counterattack." Two patterns emerge from this single coercive interactive process. The first pattern concerns the parents. Coercive interactions increase and the parent becomes more inconsistent, using harsh and inept discipline. The second pattern develops in the child. Because discipline or control techniques are ineffective, the child is empowered and resists any attempts to exercise controls placed upon him/her by the parent. The driving mechanism of this parent-child coercive process is the escalation of power strategies by both parents and child in an attempt to control the dyad.

Dishion, Patterson, and Reid (1988) presented data from a variety of sources that

suggest that conduct disordered adolescents are socialized into their role. The following

quote summarizes their position:

> We view deviance as a socialization process in which one type
> of deviant act is a prelude to more extreme acts. In families,
> the process moves from high rates of non-compliance and
> temper tantrums to increases in hitting and physical
> attacks...as the child becomes more proficient in the use of
> coercive techniques, he is reinforced for an increasing array of
> antisocial acts. Gradually there is a shift from coercive to
> antisocial acts. (p. 21)

According to Patterson (1982), the shift from coercive to antisocial acts is a

gradual one that has a single important dimension--parents who are unable to deal

effectively with their children. Initially these children are highly reinforced by their

coercive acts. Coercion obviates delays in reinforcement at the loss of such social skills

as waiting your turn, sharing, cooperating, and empathy. The coercive child appears to be

"locked in" to a process from which they seem incapable of escaping. In the words of

Dishion and others, "These are the ultimate `here and now' children. They are not

concerned with long term consequences or the feelings of others who get in their way."

(1988, p. 22).

Patterson (1982) has noted that parents often tend to cope with noncompliance by

raising their own levels of coercive behavior. In an explanation of the escalation of

coercive interaction, Patterson elucidated a process similar in detail to the parent-child

mutual socialization process described in the previous section.

Patterson and Banks (1989) described these parents, "Many of the parents who

bring their children to the Oregon Social Learning Center are extremely irritable, their

interactions seem to be thoughtless, angry reflexes rather than responses that will help socialize their child" (p. 23).

Walker (1993) pointed out that the shift from coercive strategies to antisocial strategies may not be as gradual as suggested by Patterson and colleagues. He points to the lack of social skills produced by the coercive interaction patterns in the family. Walker notes that patterns of antisocial acts start early and seem to be well established by the third grade.

As the child enters school, there are increased demands placed upon the child for civility. The child who brings to school the behavioral rigidity spawned by Patterson's "locked in" process is unable to meet these increased environmental demands. The transfer of coercive processes to the school environment does not bode well for the here-and-now child. As Kazdin (1987) has pointed out, two principal features of the conduct disordered adolescent are poor social skills and academic failure.

The Relationship Between Undersocialized Conduct

Disordered Adolescents and Language Deficits

Observations of a relationship between verbal ability and conduct problems date back to the research of Luria (1961). Luria proposed three factors that influenced this relationship. His studies suggested that the inability to label and classify, the inability to use language for vicarious rehearsal, and the inability to use self-guiding speech (rules) led to the behavioral patterns of impulsivity and poor self-control.

Vygotsky (1962) described the methods used by adolescents in acquiring self-regulated behavior. His conclusion was that normal functioning children are able to use language to self-instruct in order to inhibit undesirable behaviors. He suggested that children with language deficiencies cannot put into place these self-instructional strategies.

Meichenbaum and Goodman (1972) hypothesized that conduct problems result from mediational deficiencies. They suggested that different language and mediation deficiencies result in different patterns of behavior. They further suggest that language delays and verbal reasoning deficiencies are related to conduct problems.

Richman and Lindgren (1981) provided an important link between adolescents with behavior problems and delays in their language development. Their sample consisted of 60 adolescents who had a difference in performance and verbal IQ scores of 15 points or more on the Weschler Intelligence Scale for Children-Revised (WISC). Based on factor analysis scores of behavior rating scales, the subjects were separated into three groups. The groups were labeled according to their factor loadings as a group deficient in abstract reasoning, a group deficient in sequential memory, and a group with poor language ability. Excluded from this latter group were those subjects with poor receptive or expressive abilities. The groups were compared across a variety of measures, for example, age, sex, ethnicity, and socioeconomic status. The language disability group of 26 adolescents scored highest in terms of conduct problems, for example, aggression, inability to inhibit impulses, and academic failure.

Baker and Cantwell (1985) examined a group of 625 language-delayed students who attended a speech clinic. They found that more than 50% of those students also had psychiatric problems. The authors separated the subjects into the "psychiatrically well" and "psychiatrically troubled" groups. Using discriminant analysis, a large number of variables were examined to assess which variables would reliably predict group membership. Only two discriminant factors emerged--age and language disabilities. The language disabilities used in their analysis excluded both speech-related disabilities and disabilities related to perceptual processes, for example, hearing impaired. A developmental lag in both production and comprehension of language was the best single predictor of "psychiatric problems."

Prizant, Audet, Burke, Hummel, and Maher (1990) examined the relationship between types of communication disorders across types of psychiatric disorders. They did this in an extensive review of the relevant literature. They examined four models that would suggest the direction of causality in the relationship: (a) psychiatric disorders cause communication disorders; (b) communication disorders cause psychiatric disorders, including conduct problems; (c) there is a third hypothetical variable that is causal to both disorders; and (d) there is a causal recursive interaction between the two types of disorders. Citing the work of McCauley and Swisher (1987), Prizant et al. argue for alternative number two, that communication disorders precede psychiatric disorders in time and are causal to psychiatric disorders. The second model was seen as the more likely determinant of the relationship between communication problems and psychiatric disorders. The McCauley and Swisher article is based on a small sample ($\underline{n}$ = 29) of

physically abused children. These children were observed across time in a repeated measures design. The first problems to develop were communication disorders. These disorders tended to seriously exacerbate the children's abilities to make social-emotional adjustments. In this study, the development of language difficulties was antecedent to the development of oppositional behavior and conduct problems. While this study cannot state that language problems were causal to conduct problems, it can safely say that conduct problems were not causal to language difficulties.

Neeper and Lahey (1984) suggested that the reason that language deficits have rarely been viewed as a significant factor for understanding conduct problems is the preoccupation of the principal researchers on aggression, depression, and hyperactivity. They cited the principal research instruments by Quay (1984) and Achenbach (1978). These widely used instruments do not contain any language specific questions. Neeper and Lahey (1984) developed a 60-item instrument using questions from other checklists, but included items relating to deficits in verbal reasoning abilities. In a factor analytic study, a verbal reasoning deficit factor emerged with a large eigenvalue that explained 8% of the reliable variance.

Manning (1988) conducted a demonstration study. Her subjects were first and third grade students ($\underline{N}$ = 42) who were referred to the study for exhibiting inappropriate, acting-out classroom behaviors. The students were taught self-regulation procedures, using the strategies suggested by Vygotsky (1962). This involved speaking out loud rules that govern behavior. Manning was able to demonstrate the effectiveness of these verbal mediation strategies in developing on-task behavior and reducing acting-out behavior, for

example, aggression, swearing, and name-calling. This study by Manning suggests a causal link between verbal remediation and the reduction of conduct problems. The dependent variable in the Manning study was antisocial behavior. The independent variable was verbal remediation. As the subjects used rule-governed verbal procedures, their conduct problems were reduced in both frequency and intensity.

These studies suggest that there is a causal relationship between communication disorders and psychiatric problems. If this is the case, then what aspects of communication problems may impact the development of psychiatric problems?

Figurative Ability and Conduct Problems

Baker and Cantwell (1985) suggested that language factors such as semantics and pragmatics are not likely candidates for the explanatory link between communication deficits and behavior problems. They suggested that the ability to develop rules and the ability to develop problem-solving skills are the best factors in the multi-dimensions of language to explain this linkage.

The Baker and Cantwell studies were followed up by a study by Cantwell and Baker (1987). Rather than using oral language to assess communication problems, Cantwell used both oral and written communications. The reading levels of the written materials were controlled. The material was held at the seventh-grade level of difficulty. This study replicated the previous study by Baker and Cantwell across both written and oral communication difficulties.

If pragmatics, semantics, and level of difficulty are not likely candidates for explaining communications difficulties, what factor in language would be implicated? Baker and Cantwell have suggested language as a vehicle for problem-solving skills. Winner (1988) likewise suggests that problem-solving skills may be implicated. She makes the case that the ability to use metaphor is synonymous with analogical problem-solving. This raises the question, might it be the inability to produce and understand figurative speech that Baker and Cantwell found in their study? What other aspects of language are there that might explain the relationship between communications problems and conduct problems? This study suggests that two of the one dozen figurative devices are deficient in CDAs, and these deficiencies may well be related to the development of conduct problems. The two figurative devices are metaphor and idiom. A rationale for their selection will be given later.

A Definition of Metaphor

Defining what is a metaphor is difficult. There are three broad approaches to developing a definition. The strong thesis holds that all speech acts and written language are metaphoric. The opposite of this position, the weak thesis, holds that only novel acts of speech are metaphoric. A moderate position suggests that both the strong and weak theses are too extreme, and a position somewhere in between these two positions provides the clearest understanding of metaphor.

An excellent review of the definition of metaphors and their research implication

is provided by Indurkhya (1994). In discussing the implications of the definitions of

metaphor, he stated:

> This (the controversy over the strong thesis) may seem a quibble over terminology, but it points to a deeper problem originating from the fact that different meanings of metaphor are grounded in different fundamental assumptions about what metaphor is and exactly what a theory of metaphor should do....Quite reasonably, one can take diametrically opposing views and argue that metaphor is anything from a cognitive process to a literary device. (p. 69)

Why Metaphor Was Selected

Metaphor was selected for this study for four reasons: (a) there is a large and

growing literature on metaphor, its definition, and factors that lead to its use and

comprehension; (b) metaphor is recognized as the most prototypical of the twelve

figurative devices (Winner, 1988); (c) metaphor, by frequency counts, is the most

predominant form of figurative speech (Grice, 1975); and (d) the ability to use metaphor

is related to problem-solving abilities (Nippold, 1988). While any of the figurative

devices might have been selected, each would have a serious drawback. For example,

irony and hyperbole are rarely used. The understanding of proverbs is highly age-related.

There is considerable debate on whether humor is a figurative device. Metaphor, for the

above reasons, appears to be the best choice.

The Strong Thesis

This position, known as the strong thesis, is held by Arbid and Hesse (1986) and

Wheeler (1987). They argue that all knowledge is a symbolic representation of reality,

and this symbolic representation of reality is metaphorical. Wheeler is perhaps the most

outspoken of the strong thesis advocates. He advocates a position first suggested by

Black (1962), who claimed that all language began with metaphors and all conceptual

knowledge is based on language, so all knowledge is metaphorical. For strong thesis

advocates, mental activity and many behaviors are metaphoric. They claim that thinking

itself involves representation of reality and is therefore a stream of metaphors. The

ability to use metaphoric thought came from the way we use our senses. If a dog is

barking, we map the sound of the bark into the visual image. We particularly map it into

the moving mouth. As we see many other barking dogs, the metaphor of dog barking

becomes reified. In this process, the metaphor becomes real. In a language metaphor, a

reified metaphor might include the statement, "I'm falling." This statement might be

considered literal if the context of the metaphor was a speaker standing on a flight of

stairs. In another context, a conversation about romantic relationships, the phrase "I'm

falling" takes on a figurative meaning. It is the position of those espousing the strong

thesis that the phrase "I'm falling down the stairs" was once as metaphorical as "I'm

falling in love." Any statement containing an "is" or "are" is a metaphor. The statement

"John is big" is a metaphor for those holding the strong thesis.

Strong thesis viewpoint suggests that scientific models, that is, Newton's Grand

Clock model of the universe, charmed quarks, or self-organizing chemical reactions, are

metaphors. Advocates see all of language as metaphor. They also hold that many

behaviors are metaphor. Art is metaphor; music is metaphor; dance particularly has a

metaphoric quality. It may be a primitive tribe acting out a war dance or teens acting out

a mating ritual. Religious activities are metaphors; rituals and ceremonies are metaphors. Sporting events are microcosmic metaphors for life itself.

The Weak Thesis

McCormack (1985) has defined metaphor in a very limited way. He restricts the boundaries of metaphor to include only those expressions that are novel. He also defines metaphor in terms of cognitive processes rather than the characteristics of the metaphoric expression. McCormack (p. 6) defined metaphor as "a cognitive process by which new concepts are expressed." A metaphor, according to this definition, is no longer a metaphor once it has been added to the lexicon of native speakers. According to McCormack, our language abounds with "dead metaphors." Because they take on "specific concrete meaning," they become literal speech. Their metaphoric quality is lost as they gain acceptance.

For McCormack (1985), such metaphors as "white as snow," black as coal," or "the school is a jungle" are dead metaphors. They have been used often enough to have lost their novelty. The metaphor "the wind is hard as nails" tells much about the weather outside and is rarely heard. For McCormack, this is likewise a metaphor. The statement "the ship plowed through the sea, leaving a long white furrow" contains double metaphors. Their novelty renders them metaphoric.

The Moderate Position

Other researchers hold a more moderate position than either the strong or weak thesis. Lakoff (1986), for example, has argued that not all language is metaphor. He has

further argued against the process of reification. Reification is the process of treating an abstraction as a real object. The reification of metaphors occurs through continued usage. The reified metaphor becomes a part of the normal lexicon. For example, many reified metaphors come from the social science literature. It is important that a study rests on a "solid" conceptual "foundation" and after the exploratory period, the researcher moves to the "next level," but must be aware of "ceiling effects." These phrases appear so often that they are no longer seen as metaphors.

Lakoff (1986) suggested that metaphor consists of using metaphoric expressions as one would in ordinary language. It has a strong analogy component. Lakoff's definition results in a considerable weakening of the strong thesis, but addresses directly the relationship of metaphor to verbal reasoning.

Lakoff (1986) holds that metaphor is so common that it is obvious and goes unnoticed in everyday language. The native speaker processes metaphor as quickly as literal speech. Only in the case of novel metaphors do metaphors become translucent and visible to a native speaker. As a foreign student who does not speak English well, what might he make out of the following dialog:

Bob: It's lunch time.

Ray: Yes, let's hit the greasy spoon.

Lakoff's position is unique in that he holds that the metaphors do not exist as a part of or as a function of language. He holds that metaphor is a cognitive process. The traditional view of metaphor has been that figurative meaning is part of the speaker's language, namely, the speaker intends to send a nonliteral message (Gibbs, 1990). Lakoff

contends that it is the context of the listener, not the speaker, that is important. The speaker may be talking of birds destroying laundry hung out to dry, but it is the listener who gives meaning to "Blue Jays trash White Sox."

To understand the Lakoff (1986) position, some definition of terms is necessary. Black (1962) has given the following definition of metaphor. A metaphor contains a term called the "topic." The topic is usually the first noun in a metaphor and could be called the subject or focus of the metaphor. The second term, usually a noun, is called the "vehicle." Black suggested that the shared features of the topic and vehicle, the "ground," was the basis of the metaphor. For example, in the Shakespearian metaphor "Juliet was the sun," Juliet is the topic of that metaphor, the sun is the vehicle, and the ground could be any characteristic of the relationship that would relate Juliet to the sun, such as brilliance, brightness, beauty, and so forth.

It is Lakoff's (1986) position that the process of developing the ground for a metaphor involves "domain mapping." The characteristics of the vehicle are mapped into the topic, thus broadening our conceptualizations of the topic. For Lakoff, this is not just an artifact of language, but is a fundamental thinking process. Siegelman (1990) called this type of verbal reasoning a "bridging metaphor."

Lakoff (1993) has refined his concept of domain mapping explaining this cognitive process. Lakoff outlines the following processes as the method of metaphoric understanding: (a) The listener perceives a statement that appears to be literally false; (b) the listener isolates the topic and vehicle of the statement; (c) the listener maps (in the mathematical sense) the vehicle into the topic; for example, "love is a journey." The

listener searches for inferential patterns in the vehicle, journey, that can be used to reason about love; and (d) this cross-domain mapping allows the listener to develop new understandings about a love relationship that was not apparent before the metaphoric processes.

It would seem reasonable for the purposes of this study to adopt a definition of metaphor that would avoid the many all-encompassing assumptions of the strong thesis and avoid the restrictive assumption required by the weak thesis. The definition used in this study will be a moderate position similar to that of Lakoff.

How Metaphoric Abilities Are Developed

Ortony (1979) used a definition of metaphor closely related to Lakoff's definition. Ortony suggested that comprehension of metaphors is due to language experience. The ability to comprehend metaphors was dependent upon the amount of time the child had spent observing this type of language in everyday use. Various refinements to this position were made by Ortony and his colleagues in 1985 (Ortony, Turner, & Larson-Shapiro, 1985). They argued from a research base that exposure to metaphoric language is the critical element in learning to understand metaphor.

The definition of what constitutes a metaphor takes on considerable importance. This is particularly true when errors or inability to process metaphors are considered. The adoption of the thesis of Lakoff (1986), Lakoff and Turner (1989), and Lakoff (1993) places the production and comprehension of metaphors in the arena of learned behavior. The process of gaining figurative competence would be a moment-by-moment socialization process.

Ortony (1979) pointed out that regardless of how metaphoric understanding is conceptualized, the best predictor of metaphoric comprehension is exposure to metaphoric communication; the best predictor of the ability to produce metaphoric utterance is practice.

One of the basic theoretical caveats in metaphor comprehension is the position that metaphoric abilities are innate language processing mechanisms as opposed to the view that metaphoric abilities are learned. Ortony (1992) argued very persuasively from a variety of literatures that the principal reason metaphoric ability increases with age is due to practice effects rather than increases in information processing capacities.

Primary Factors Influencing Metaphoric Understanding

The factors that have been identified that influence the production and comprehension of metaphor are: (a) chronological age; (b) the verbal and social context in which the metaphor is embedded; (c) verbal ability, namely, classification skills; (d) domain knowledge; (e) exposure to figurative language; (f) IQ; (g) emotional factors; (h) socioeconomic status; and (i) sex.

Age

Age is clearly the most pervasive of the factors influencing metaphoric understanding. The ability to comprehend and use metaphors appears to be linear across the ages 4 to 16. Studies in the mid-to-late-1970s attempted to relate the ability to produce metaphor and Piagetian cognitive stages. Cometa and Eson (1978)

demonstrated that the concrete operational stage (ages 9 through 11) was necessary for the comprehension of difficult as opposed to easy metaphors. Billow (1975) also examined metaphor comprehension in relation to Piagetian cognitive levels. He found that there was a definite developmental trend. This trend matched Piagetian stages. Research produced by Vosniadou (1987) has shown a methodological weakness that characterized these early studies. When the method of assessing metaphoric understanding was changed from paraphrase to multiple choice, younger subjects did much better in responding to metaphors. The research by Vosniadou demonstrates that metaphoric ability begins in the preschool years as a sufficient vocabulary develops, and that the ability to use metaphor increases steadily to the age of 14. This is a critical point. On this point will turn the future argument that lack of metaphoric ability precedes the development of conduct problems.

Siltanen (1986) refined the research of Cometa and Eson (1978) on easy and difficult metaphors. She developed metaphors of easy, moderate, and difficult understanding by varying the reading level of the topic and the vehicle of a metaphor. An easy metaphor had both an easily read topic and vehicle; a metaphor of moderate difficulty had either the topic or the vehicle changed to a more difficult level. In a difficult metaphor, both topic and vehicle were changed. She then presented an item pool of each level of difficulty to 60 raters who judged the metaphors as easy, moderate, and difficult. Metaphors with high levels of concordance were retained. Siltanen was able to demonstrate that metaphor comprehension is a continuous monotonic mathematic function without a point of inflection, namely, a linear process. She demonstrated that

the understanding of easy metaphors begins at age 5 and progresses to the mastery of difficult metaphors at age 15.

In summary, age has proven to be the single factor that is consistent across studies of metaphoric abilities. It is well established that the ability to comprehend metaphors starts early. By age 4, the average child understands simple metaphors. It also is clear that the ability to understand and use metaphors is a linear process, progressing as the child grows older. In the case of metaphor recognition, the process is completed around age 15 for the typical adolescent.

Context

Context, according to Winner (1988), is a critical element for understanding metaphor. Winner pointed out two separate types of context. The first is the information contained in the verbal material in which the metaphor occurs. Winner suggested that the verbal context gives the listener stimulus support of the selection of the appropriate ground to relate topic to vehicle. For example, the old riddle, "What is black and white and red (read) all over?" has meaning when spoken, but not when written. The basic ambiguity that creates the riddle does not occur in a written context. Social context also provides cues for the listener. The metaphor "Andretti is ice" would mean far different things at the auto race track rather than at a social gathering.

Domain Knowledge

Keil (1985) tested the hypothesis that problems in the comprehension of metaphor are a result of lack of domain knowledge. He was able to demonstrate that

children with knowledge deficits had difficulty comprehending metaphors. He also demonstrated that when knowledge deficits are not present, children comprehend metaphors as readily as literal statements. Keil further tested the hypothesis that the ability to understand metaphors emerges on a domain-by-domain basis. This hypothesis was the opposite of the traditional view that metaphoric ability was a general ability that functioned independently of domains. The thrust of his research held that once a child was competent in understanding the structure and content of any two domains, any metaphor that linked the two domains would be understandable. Keil also suggested that any third domain where the child lacked competence would present problems in understanding if this third domain was used as either topic or vehicle in a metaphor. As hypothesized, Keil's studies have demonstrated that children's abilities emerged on a domain-by-domain basis.

Keil has also presented an analysis of the types of errors made by children at various age levels. His analysis provided a four-step pattern of comprehension. This analysis procedure is mentioned because it may provide a basis for the analysis of errors made by conduct disordered adolescents.

In level one, the child has limited domain knowledge. In this case, the metaphoric statement was taken literally; for example, a "smooth person" had just shaved. The child only understands the literal meaning of the word smooth.

In level two, the child has an incomplete knowledge of the two metaphoric domains and is unable to juxtapose the domains properly; for example, a "frosty person" was "one who gave things to the poor."

In level three, domain knowledge has increased, but not fully developed. Using the metaphor "a sour person isn't very nice," Keil noted level three responses. These responses indicate that the child understands the direction dimension of the domain, namely, both "sour" and "not nice" are negative attributes. The child, however, may not be able to give an exact meaning. Sour is recognized as bad, but so is the word salty. Children at this level fail, however, to distinguish between related concepts; for example, "salty people" are also "not nice."

At the fourth level, domain knowledge is complete and the child is able to link the domains with precision; for example, an idea that was "mowed down" was rejected or replaced by a better idea. Age again plays an important role in acquiring domain specific knowledge. The metaphor "a trumped up charge" is understood only by those who had experienced a trump card in bridge, hearts, and so forth.

Intelligence Quotient

The research evidence to date is unclear about the role of IQ in metaphoric ability. Verbal abilities are a factor in the development of metaphoric ability in young children (Sawyers, Moron, Fu, & Wingard, 1992; Vosniadou, 1987.) In the study of young children by Sawyers et al., age was the primary factor in predicting metaphoric understanding. In this sample of 6 and 7 year olds, IQ did emerge in this study as a significant covariate.

In a pilot study conducted by the author (Berger, 1998), IQ was a variable included in a multiple regression that predicted subjects' (age 14-17) ability to comprehend metaphors. IQ accounted for 4% of the total variance. Nippold (1988),

however, found that IQ accounted for negligible variance in predicting the ability to comprehend metaphors in children ages 9-19.

It seems that IQ scores for young children that rely heavily on vocabulary may be an important factor in metaphor comprehension at that age. IQ appears to be less important as a factor in older children. The exact role of IQ on metaphoric understanding is unclear at this time.

Emotional Factors

Quay (1992) has suggested that an adolescent's emotional state may influence his or her ability to develop "abstract language." Quay suggested that any attempt to measure language development must take into account the incidence of anxiety and depression in this population. Quay's assertion must be accepted on its face validity. In the review of the literature on figurative abilities no empirical studies were found that related emotional factors and figurative ability.

Socioeconomic Status

Winner (1988) has suggested that many families in a low socioeconomic status (SES) are often dysfunctional. As a result of this dysfunction, their style of language is very direct and literal; "there is little banter around the dinner table." Low SES may be a factor in exposure to figurative language. Winner, however, has not empirically tested the relationship between SES and figurative comprehension.

Sex

Some studies have suggested that sex may be an important factor in metaphoric understanding, particularly in childhood; Vosniadou (1992) found that in younger-aged children, girls outperformed boys in metaphoric comprehension. Lutzer (1991) completed a similar study with children 3 through 6 years of age. Somewhat surprisingly, boys outperformed girls in metaphoric tasks at this age. These are inconsistent results. Winner and Leekam (1991), however, have consistently found that sex plays no significant role in metaphoric understanding among o der children. The role of sex in understanding metaphor production or comprehension is unclear at this time.

Idioms as the Second Figurative Measure

Idioms were chosen as the second measure of figurative competence for the following reasons: (a) there is a large literature upon which to draw; (b) idiomatic expressions are a natural vehicle for adolescent expression; (c) standardized tests of idiomatic competence with known psychometric characteristics already exist; and (d) idioms share some common features with metaphor, but they have a strong unique nature. While metaphors rely on novelty for comprehension, idioms take on meaning through constant usage. As is often the case, a metaphor that is oft repeated can become an idiom.

Winner (1988) defined an idiom as a figurative device where the idiomatic phrase has several meanings. There is a literal interpretation based on the syntax of the phrase,

but this interpretation is meaningless in the context in which it is used. By convention, the phrase has taken on a figurative meaning. An example might prove illustrative. Bill and John were arguing. Bill said to John, "You're barking up the wrong tree." This seems to make little sense when taken literally. However, when used in the figurative sense of the expression in the context of a political campaign for public office, it does make sense.

Ackerman (1982) has pointed out the opposite role of metaphors and idioms. As metaphors are used repeatedly, they become reified and lose their metaphoric quality. Idioms, on the other hand, depend on repeated use for the acquisition of their figurative meaning. Often idioms are known only to small subgroups in the larger population. Teenage slang is an excellent example, such as, "that tune is bad" has the figurative meaning that the music is very good. The literal meaning of an idiom does not assist in comprehending its meaning.

Because idioms are locally bound, this discussion will address only "standard idioms." A standard idiomatic expression is one that occurs in normal conversation with sufficient frequency to have its figurative nature recognized by a majority of the general native speaking population.

Factors Influencing Idiomatic Understanding

Age

Factor number one in idiom recognition is age. Data produced by subscale #8, Idioms of the Fullerton Language Test for Adolescents (Consulting Psychological Press,

1980) indicate a clear development trend. Data are given for 11 through 18 year olds, and the mean number of idioms recognized increases with each year of age.

Lodge and Leach (1975) conducted research on idiom comprehension across various age levels. The ages of subjects ranged from 9 to 21 years. They demonstrated a clear progression of correct responses to standard idioms as age increased. Strand and Fraser (1979) replicated the Lodge and Leach study with an extended range of ages and with methodological refinements. They used hard and easy idioms and were looking for interactive effects between age and difficulty. They reported two significant findings: (a) Children younger than age 11 had difficulty determining the figurative meaning of idioms, and b) there were no differences between the hard and easy idioms after age 11.

Exposure

A second contributor to idiom comprehension is exposure to idiomatic language. Strand and Fraser (1979) found that exposure to idioms was the single variable that predicted idiomatic understanding. Their position appears to be an echo of Ortony's observations on understanding metaphor.

Context

Context is the third primary factor in idiom understanding. Context can be of two types, namely, linguistic and situational. Linguistic context is defined by the linguistic features that surround the idiom. Winner (1988) listed the linguistic factors of verb tense, active or passive voice, gender, sentence length, writing style, and reading level as important cues for idiom recognition. Situational cues involve the context in which the

idiom is embedded. Context variables that fix who is acting upon whom or what and under what circumstances are important factors in idiom recognition. According to Winner, context cues are particularly important to those who have been exposed to an idiom but are unsure of its exact meaning.

A Model Relating Literal Language
to Conduct Problems

Forgas (1985) has demonstrated that language has the effect of liberating us from problems by providing word symbols that can be used to evaluate the past, problem-solve the present, and plan the future. He also pointed out that language can be as tyrannical as it can be liberating. Languages often set the limits of our problem-solving capacities. Poor conceptualization, that is, bad metaphors, may lead to inappropriate action. If a friend of a literal-speaking CDA suggested, "Let's go call some chicks," the CDA may want to know how you go about calling a chicken. It is the premise of this study that the socialization model for conduct disordered adolescents proposed by Patterson et al. might well be maintained or exacerbated by the impoverished language of the parent and child caught up in a coercive language style. Parent-child dyads may not solve problems for at least two reasons. First, they do not want to, and second, because they do not know how. The language skills necessary for problem solving do not exist. If the focus of such a negative relationship is on the here and now, attack and counterattack, little problem solving would take place. This is the very process that was documented by Patterson et al. (1989). They described irritable parent and oppositional child confrontations. Both are

engaged in heated emotional exchanges. They explain how these coercive interactions negatively affect the critical disciplinary practices of monitoring and responsibility setting. An analysis of the Patterson video tapes of CDAs' interactions with parents indicates that such interactions are "brief, literal, forceful and direct" (Patterson 1982).

The externalizing child tends to respond to coercive demands with oppositional refusals and counterdemands. The parent, not knowing how to stop this interaction by engaging in problem solving, is left with one alternative, to increase the forcefulness of the demands. Perhaps some figurative language creeps into such conversations when they reach the point of character assassination, "You're a bitch!" "Don't call me that, you little bastard!" Patterson (1982) has suggested that such coercive dialogues are more than social interactions. They are a basic socialization process affecting the perceptions, cognitions, and behaviors of both parents and child. The result is an aggressive, oppositional child and a harsh, inconsistent, irritable parent.

While it may be argued that language may play a crucial role in the above coercive interactions, it is equally plausible that other factors such as anger are so pervasive that language has little or no contribution to the outcome of such coercive interactions. Empirical data are unavailable to answer that question. What is known (Patterson, 1982) is that such interactions make up only a small percentage of the time in the family, but they are so powerful that they influence other interactions. These everyday interactions tend to be brief and direct.

Banks and Patterson (1992) have presented a simplified causal model of the coercive model. This model focuses on mother's discipline as the primary factor in

predicting adolescent delinquent behavior. Banks and Patterson (1992) use various descriptions in talking about this discipline style. The descriptor includes the words harsh, inept, coercive and inconsistent. The Banks-Patterson model suggests that a parent's coercive style brings about antisocial acts as a counterattack to offset the parent's coercion.

While the Banks-Patterson model addresses mother's discipline at the macro level, little has been done to break the causal element, mother's discipline, into components that would allow further analysis. Borrowing the essential elements from the Banks-Patterson model, the model is broken down into a micro model that suggests that the dyad's brief, direct, harsh, literal, coercive, inconsistent language carries with it the implication of misunderstanding, frustration, anger, alienation, and poor social skills. It would appear obvious that few, if any, metaphors are woven in these coercive dialogs.

Summary

It has been established that children with conduct problems tend to have communication difficulties. Patterson and his associates at the Oregon Social Learning Center have demonstrated that parents of conduct disordered adolescents socialized their children into that role. The conduct disordered adolescents are characterized by coercive strategies that result in harsh and inconsistent discipline on the part of parents and noncompliance and aggression in children. Walker (1993) suggested that this strategy learned at home is carried over to school as the primary way of dealing with others. The result is poor social skills, which in turn result in peer rejection, oppositional behavior,

and poor self-concept for the child. Berger (1998), in a small-sample pilot study, suggested that CDAs are deficient in figurative language. Ortony (1979) suggested links between these two observations. First, he stated that those who are competent in the use of language have had the chance to practice language development within the family setting. Second, from this perspective, the acquisition of figurative abilities is also a socialization process. It begins at ages 4-5 and reaches full attainment in the late teens. Quay (1992) has stipulated that those who are without full language capacities may be at higher risk for social incompetence, academic failure, and general maladjustment to families and society.

If the development of conduct problems is due to socialization processes, language may play a causal role in the development of maladaptive behavior in this population. Figurative language deficits may well be implicated as a factor that both initiates noncompliance and antisocial behavior and maintains that style of behavior in both parent and child.

Finally, it is necessary to examine two clinical constructs that may play a role in the mechanisms that explain the relationship between lack of figurative and conduct problems. These constructs are: (a) anger-frustration, and (b) poor social skills. Kazdin (1987) has pointed out the importance of these two variables in developing conduct problems. Anger is also an essential factor for Patterson (1992). He also viewed the lack of social skills as an essential element in the socialization process that develops conduct problems. Walker (1993) suggested that same-sex peer rejection in later elementary grades is a significant factor in developing conduct problems. The review of literature

noted many examples that relate anger and poor social skills to conduct problems. There were no studies, however, that related figurative ability to anger or poor social skills.

CHAPTER III

THE STUDY

Purpose

This is an exploratory study whose purpose is to examine the interface between figurative language abilities and conduct problems in adolescents. Do these two domains share enough common ground to make future conceptualizations, model, and investigation plausible? If the nonuse of figurative language does lend to some degree of understanding CDAs, this study would represent the first small step in what could be a long and arduous journey. The literature reviewed suggests there may exist a relationship between conduct problems and literal language. This study will attempt to explore the nature of that relationship.

The purpose of this study is <u>not</u> to construct a metaphor about metaphors. A metaphor of metaphors would map the domain of figurative ability into the topic domain of CDAs. This study simply asks, would such an attempt be feasible? The purpose of this study is to determine if there is enough shared variance between measurements of solitary aggressive CDAs and figurative language to make further investigation worthwhile.

Method

Design

While several methods of analysis would have been appropriate to this study, a causal modeling-structural equation procedure was adopted. This approach was adopted

based on the suggestion of Ramsey, Walker, and Shinn (1992) in an article

recommending causal modeling for exploratory analysis. The article suggested that

where theory is very strong and well supported by empirical data, such techniques as

confirmatory factor analysis would be appropriate. However, where both theory and prior

research evidence are lacking, causal modeling is required to avoid the problems of

under identification of the model. An excellent review of underidentification is given by

Scott (1991).

In addition to comparing the results of this study to established data, an additional

check of the reliability of key measures was made. Patterson and Banks (1989) have

argued that single measures of a latent construct present high risks of experimental error.

To quote from their study:

> In many studies only a single method is employed in obtaining predictive
> data; such practice can be termed a mono method approach. Furthermore,
> many studies depend on a single person (e.g. a child, parent or teacher)
> to provide data. We refer to such data providers as "agents." Unfortunately,
> too many studies utilize single methods and single agents to operationally
> define all or many concepts in their theoretical framework. In our
> view, as soon as even two concepts share data types of method and/or
> agents, there is reason to suspect some significant portion of the
> shared variance to be accounted for by a mono method bias. (p.
> 1)

Subjects

The subjects for this experiment were 109 adolescents between the ages of 14 and

18. The sample members were volunteers from a population of 520 adolescents attending

an alternative high school in Ogden, Utah. All students attending the school have been

placed there by an individualized educational plan (IEP) following a history of being

unable to adapt to a regular school setting, the principal complaint being their inability to get along with adult authority figures in the traditional school setting.

Subject Characteristics

Sixty-four percent of the subjects were male. The average age of all subjects was 16.1 years. Their average grade level was 10.7. Twenty-two percent were bilingual. Thirty-eight percent of the subjects qualified for free school lunch in the school year. Their average IQ was 94.5.

Exclusions

Students were excluded from the study if English was their second language. The reason for this exclusion was to eliminate subjects that may not understand metaphor. Only three students were excluded for low I.Q. because a majority of students in the low IQ range attend school in another specialized facility.

Certain exclusions were made from the group that turned in completed data packets. Excluded were those students whose parent questionnaire was completed by someone other than a parent. Eleven students had their packets completed by foster or proctor home parents, and one by an older brother who also attended the alternative high school. Because a basic tenant of this study is that lack of exposure in the family to figurative language is a factor in communications problems, it was felt that natural parents were in the best position to rate their coercive style.

This sample was selected by requesting volunteers from the regular studentbody of the school. Excluded from the initial request was the school's "P.M." (after hours)

program, and a specialized program for young mothers. Students were informed by their classroom teachers that they could earn a six-pack of Coca-Cola if they participated. Letters to parents explaining the research project and an informed consent form were sent to the homes of those who initially volunteered ($\underline{N} = 187$). One hundred thirty-seven students completed their initial assessment packages. Exclusions from the study were made at two points. After the completion of the student packet, language and IQ exclusions were made. Following return of the parent packets, nonparent responder exclusions were made.

Instruments

The instruments used in this research can be classified into the following types: (1) two outcome measures that were used to compute the dependent measure, and (2) two measures were used to compute each of the latent independent variables, teen figurative competence and parent discipline style. These latent variables were computed using principal factor analytic procedures with varamax rotation. Factor scores were produced in this procedure that were then used to compute values for the latent variable, conduct problems.

Dependent variable measures. Two types of measurements were collected to compute the dependent variable, namely, self-report and checklist data completed by teachers. The dependent variable in this study was the degree of conduct problems of each subject. This was measured by the teacher-rated Quay-Peterson RBC (Quay &

Peterson, 1987) and by a subject self-rating instrument. The self-rating scale was designed to rate the seven characteristics of a CDA listed by Kazdin (1987).

The Revised Behavior Checklist. The RBC is an 85-item rating scale (Quay, 1992) that measures a narrow range of psychiatric problems. It was completed by the subjects' teachers. High reliability, validity, and factor structure for this instrument have previously been established. Twenty-two items are included in the conduct disorder ("CD") scale. They are listed in Appendix A.

An excellent review of this instrument is provided by Lahey and Piacentini (1985). They reported high levels of both internal reliability and interrater reliabilities. (Test-retest reliabilities between .49 and .85; interrater reliabilities between .55 and .93; and validity coefficients with single criterion measures such as arrest records have ranged between .42 and .97.)

Three major factor analytic studies of the RBC were reported by Quay (1992). These studies suggest that two of the factors, conduct disordered and anxiety withdrawn (depressed), account for a majority of the reliable variance in the factorial studies. Quay also suggested that the two factors are largely orthogonal. They are mutually predictive of general adolescent problems, but measure separate (uncorrelated) dimensions of the more general problem. The depression scale ("AW") contains 11 items and is included in Appendix B.

Elliott and Gresham (1989) reported the general efficacy of teacher rating as opposed to parent rating or self-report. They conclude: (a) Teachers have an extensive exposure to students and are able to use this depth of exposure to make valid judgments,

(b) teacher ratings are efficient, (c) teacher ratings have long a history of effectiveness in the assessment of pathology, (d) teacher ratings are highly reliable, and (e) teacher ratings consistently report higher concurrent validity than do parent ratings or self-report ratings.

Self-report measure of conduct disorder. A 14-item true-false self-report list of conduct problems was constructed to obtain a second measure of the dependent variable. The method used to construct this instrument was to develop two questions for each of the seven factors suggested by Kazdin as the principal markers of a conduct disorder classification. One question was asked in a positive direction, and the other in a negative direction. For example, the two questions relating to academic failure were: my grades are average or above average; I am failing one or more classes.

A coefficient alpha was run on the 14 items constructed to measure conduct problems. The alpha was $r = .79$ for the 109 subjects. The correlation between the RBC and the 16-item checklist was $r = .59$. This self-report checklist is included in Appendix C.

Independent variable measures. There are two types of independent variables included in this research. They include two measures of figurative competence. There were also two measures of parent-child interaction style. Figurative competence for both parent and child was assessed using 15 metaphors ordered by level of difficulty. The technique of ordering was given by Siltanen (1986). An original item pool of 30 metaphors given in context was rated by 62 raters who placed each metaphor into one of three levels of difficulty: easy, moderate, and difficult to understand. This pool of items

was obtained by using the original pool of items listed by Siltanen. Those metaphors with extreme variances were dropped from the item pool. The original 30-item pool of metaphors is contained in Appendix D. The 15 items that were retained from this ranking process were Q-sorted by 16 metaphorically competent judges to develop a continuum of metaphors by difficulty. The results of the Q-sorts were 15 nontied rankings of the metaphors. The metaphors were then listed in descending order of difficulty based on their median Q-sort ranking.

When completing this instrument, experimental subjects were required to read each item in its context and to paraphrase its meaning by writing their response. Scoring of each item used a procedure suggested by Siltanen. The essential feature of each metaphor is the ground that relates topic to vehicle. A blank item or a simple rephrase of the original metaphor was scored zero. A subject paraphrase that recognized a ground but failed to clearly state a relationship between topic and vehicle was scored one. A paraphrase that clearly identified a group relationship was scored two. The following are examples taken from study data of item 8: "Butterflies are rainbows."

Zero score: "Butterflies are bugs."

One score: "They are pretty."

Two score: "Butterflies are beautiful because they are so colorful."

The final items, their context, and their ordering are included in Appendix E.

A second measure of figurative competency was 20 idioms taken from the Fullerton Language Test for Adolescents (Consulting Psychological Press, 1980). This standardized test contains 20 idioms as its subtest number 8. The Fullerton idioms are

presented without context and require a written paraphrase of the idiom. This presentation makes optimal demands of the respondent, with no context support being given. The Fullerton scoring procedure uses a zero, one, and two scoring procedure, with a high score of two indicating the paraphrase contains the gist of the idiom. A high score represents greater idiom recognition than lower scores. The easiest of the Fullerton items is "turning over a new leaf" and "throwing one's hat into the ring" is the most difficult. The Publishers Technical Manual (Consulting Psychological Press, 1980) reports a number of studies listing the reliability and validity of the idiom subscale. Reliabilities range from .47 to .72. Concurrent validity of the subscale is reported to be in the .33 to .65 range. The 20 idioms are included in Appendix F.

Parent-Child interaction questionnaires. Parent-child interaction style was assessed by questionnaires given to both parent and child. Eighteen questions with similar content were given to both parent and child. The basis for these questions was the Patterson coding categories developed to examine parent-child interactions (Patterson, 1982). These coding categories were originally factorially derived by Patterson. They have been used extensively and have high interrater reliability. The Patterson procedure uses videotaped segments of parent-child interactions. An interval sampling is made of the tape, with three trained observers coding each time sample. Interrater reliabilities vary across categories, but all exceed .70. The coding categories assess the degree of coercive interactions between a parent and child.

The score on the coercive interaction style questionnaire would indicate the number of coercive items endorsed by the parent and by the adolescent. A high score

would indicate the respondents engaging in a high number of coercive interaction patterns. These questionnaires are included in Appendix F for parents and Appendix G for adolescents.

Control variables. The following control variables were collected in this study. Listed is the source of the data: sex (self-report); age (self-report), SES (cumulative school record); IQ (cumulative school record); bilingual (teacher report); and depression (the "AW" factor, namely, the 11-item depression scale, from the RBC).

Socioeconomic status was measured by the students' prior application for free lunch in the last year. This was the only control variable to present problems in data collection. The data were readily available for students from the Ogden and Weber School Districts. It was, however, unavailable on 10 students who transferred into the school from outlying school districts: Morgan, Bear River, Logan, and Salt Lake City.

No provisions were made to exclude or control for students with extreme emotional problems. Students with severe emotional problems, namely, psychosis, anxiety attacks, and severe depression, attend a separate day treatment facility.

Procedure

Completion of measures. The research project was discussed with the 20 faculty members of the alternative high school at a faculty meeting. It was explained that approximately 10 students were needed from each teacher to participate in the experiment. Their role in the rating process was explained and all 20 teachers volunteered to participate in the study. Teachers then explained the project to their home

room section. This procedure produced 187 volunteers. Letters of explanation and informed consent forms were mailed to parents by the school. Data were collected from the adolescent subjects, their parents, and corresponding teachers. Data collection procedures were accomplished in four separate phases. In phase one, parent packets were given to each of the 187 students to take home. The parent packets contained parent questionnaires and figurative language instruments. They were to be completed by a parent and returned the following day. One week was allowed for this phase and teachers gave daily reminders to those who had not returned their parental packets. There were 137 parent packets returned by students.

In phase two, the students whose parents had returned the packet completed four instruments in class: the 14-item self-report instrument of conduct problems, the metaphor comprehension instrument, the idiom recognition instrument, and the teen version of the parent-teen interaction questionnaire. Upon completion of this phase, students who completed the in-class instruments and turned in a parent packet were given a slip that could be exchanged for a six-pack of Coca-Cola at the school office. One hundred thirty-seven subjects received a slip for a six-pack of Coca-Cola.

In phase three, teachers completed the RBC and a brief rating sheet asking them to give the students' primary language and rate their degree of bilingual fluency. Although only 33 items of the RBC were used, teachers were requested to complete the entire instrument to maintain its psychometric integrity. Quay (1992) pointed out that previous research using only the 22 items from the CD scale of the RBC changed the

scale's factor structure. The resulting changes were not consistent with norms developed while the items were included in the RBC.

In phase four, the cumulative records of the 137 subjects were examined. The free lunch program, reading level, and IQ scores from the WISC-R were obtained from school records. Because of federal reporting requirements for alternative school placement, missing data were minor problems with the exception of the free lunch program. In the analysis of the data, it was determined that missing data would not be a significant problem, so a pairwise deletion procedure was used. This procedure minimizes the effects of missing data by omitting from computations the subject with missing data only from those correlations involving the missing data variable. All other subject data were retained and used in the subsequent analysis. At the conclusion of phase four, exclusions were made from the a priori standards described in the subject selection section, with a resulting sample size of 109.

Scoring the measures. Scoring for the self-report instrument was done in a straightforward manner. All items from the instrument were entered into a BASIC computer program developed by the author. Negative question directions were reversed and a total score was computed by adding statements that related to the seven conduct disorder markers. Scoring for the checklist was made as a "1" for an endorsed item and "0" for a non-endorsed item. Items left blank were counted as a "0". The total score was the addition of all items. A high score represents the endorsement of a number of the Kazdin "CD" markers; a low score represents little or no endorsement.

The RBC's 22 CD items were summed to yield the teachers' responses to the items. The RBC items are all negatively worded statements. A teacher marks a "0" for this problem if it rarely or never manifests, a "1" for sometimes manifests, and a "2" for usually or always manifests. The ranking of a large number of high scores is associated with conduct problems. Scoring for the 15 metaphoric items was done by two separate scorers. Their results were compared and differences were discussed until they arrived at a consensus on the item. Items left blank, don't know, or a clear misrepresentation of the metaphor received a "0" score. A paraphrase that partially reflected some aspect of a ground relating vehicle to topic was scored "1". Responses that included a salient ground were scored as a "2". A high score represents higher levels of metaphoric understanding. The criteria used to score these items are listed in Appendix H.

Idioms were scored using criteria and scoring examples from the technical manual of the Fullerton. Two judges were used and disagreements on scoring items were discussed until consensus was obtained. Higher scores reflect more idiomatic competence. The scoring criterion for the Fullerton Subscale #8 is included in Appendix I.

The parent and teen questionnaires were scored according to the responses made via a hand-scoring template. Response A was scored as "0", or no problem indicated by the respondent. Response B was scored as "1" indicating endorsement of the response.

The causal modeling design. A causal model-structural equation approach provides a first step in ongoing research. The principal advantages of the causal model approach are that because the analysis includes several explanatory factors, maximum

use is made of available information and the amount of explained variance is increased.

It is important to understand several limitations in using this type of analysis: (a) The

analysis is correlational in nature and relies on theory or previous research to suggest the

direction of possible causal relationships; (b) instead of examining differences between

groups, the goal of causal modeling is to specify a set of relationships between latent

variables. Because latent variables are not directly measurable, the value of each is

estimated by a theory driven set of operational definitions or indicators that define the

construct; and (c) it should be noted that causal modeling is a statistical procedure, not a

direct analog to reality. Estimates of path coefficients have no direct bearing on reality.

These coefficients relate only to the statistical model specified.

Construction of a model for this study proceeded in two steps. The first step

involved using the well-established relationship in the Patterson studies (Patterson and

Banks, 1989). E. J. Ramsey (personal communication, March, 1992) reported that there

are numerous studies conducted at the Oregon Social Learning Center that have

measured the relationship. The correlation between these two latent variables ranges

from a low of .35 to a high of .45.

Step two of the model construction involves adding a figurative language

component to the Patterson-Banks model. It is assumed at this point that the direction of

causal flow is from the parents' coercive style to the child's use of literal language. This

assumption is made for the following reasons: (a) The relation has definite face validity,

although the opposite relationship could be possible. It would be assumed that a parent's

coercive style would directly affect the display rule the child uses to self-present. A

coercive style would affect both the type of language used and the child's behavior since (a) the development of figurative ability occurs before the emergence of conduct problems, although not a strong argument, it does suggest direction; and (b) the single study available that bears on this issue (McCauley & Swisher, 1987) indicates that emotional and conduct problems develop after communications problems.

It should be noted in the model in Figure 1 that path PI-PIII provides an indirect check of the instruments used in this study. According to E. J. Ramsey (personal communication, March, 1992) this path coefficient should be around $r = .40$.

Both path coefficients PI-PII and PII-PIII are of considerable importance. Path PII-PIII will give the zero order correlation between the measure of conduct disorder and figurative competence. H. M. Walker (personal communication, April, 1992) has suggested that these two latent constructs are very divergent. They have no obvious overlap. As a result, if this study finds a zero-order correlation in the magnitude of .33, the results should be considered encouraging.
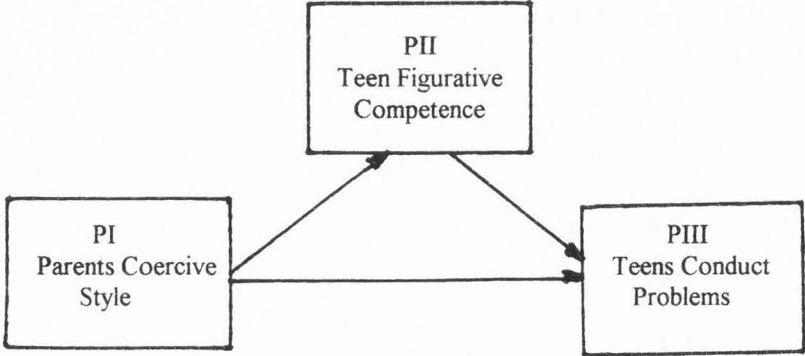

Figure 1. Relationship of coercive style to conduct problems.

Of equal importance is the path PI-PII. This path coefficient would represent the correlation between the parents' coercive style and the child's figurative competence, with the variance in path PII-PIII removed.

Statistical Analysis

Several passes using stepwise-regression procedures through the data were required. The initial pass through the data produced descriptive statistics and item intercorrelation. This correlation matrix was used for subsequent analysis.

The second pass through the data examined the relationship of the control variables to the independent variables. The stepwise-regression procedure used allowed each control variable to enter into the equation using a Wilk's Lambda as the entry criterion. A third pass through the data established the path coefficient PI-PII by removing the variance contributed by path PII-PIII. The fourth step in the analysis was a principal component factor analysis using a varamax rotation of the six control variables. This procedure was used to assure the independence of the control variables. A fifth and final stepwise regression analysis was conducted regressing independent variable metaphoric understanding against the dependent variables. The six control variables were forced to enter this equation as covariates. This was to determine if any of the covariates accounted for variance in the dependent variable.
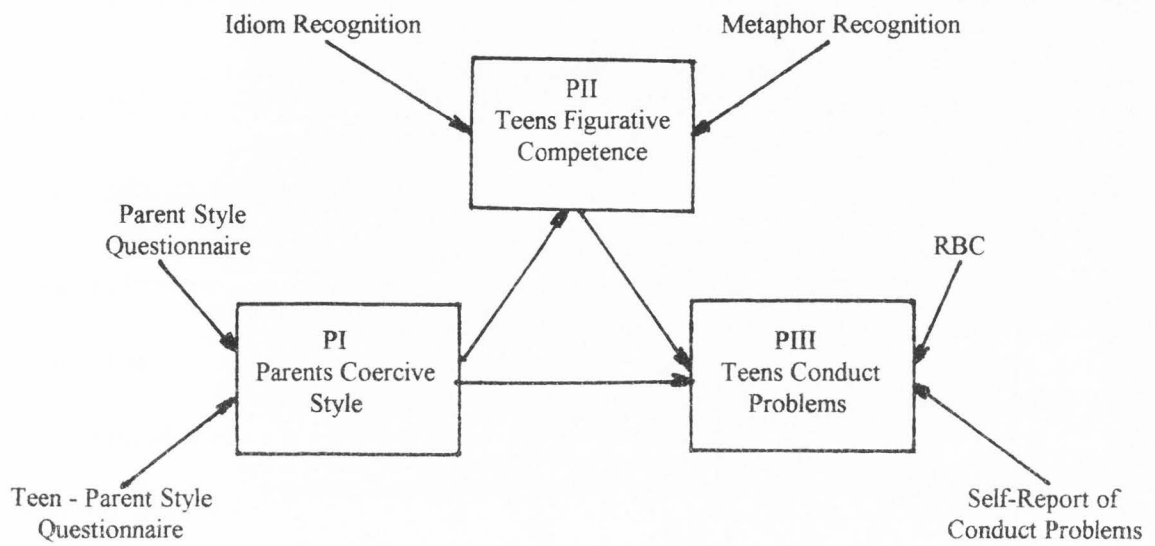
Figure 2. A causal model of conduct problems examining coercive style and figurative

competence.

CHAPTER IV

RESULTS

The results chapter of this research is separated into four sections. In the first section, the overall results are presented. This section also includes a comparison of the findings to previous research. The second section examines the control variables and their relationship to the independent variables. Section three is devoted to the primary analysis. This involves the examination of the causal model relating parents' coercive style and adolescents' figurative competence with conduct problems. In section four, the estimated path coefficients are added to the model which estimates the total variance accounted for by the model. Table 1 includes means and standard deviations of all variables used in the study.

Comparison of Findings to Established Data

Quay (1992) reported the RBC mean and standard deviations on the 22-item CD scale for 97 conduct disordered adolescents in self-contained classrooms in a school district in the Midwest. The mean of this group of primarily male students was 16.9, with a standard deviation of 11.7. This compares to the mean and standard deviation of the current sample as follows; the mean equals 17.0 and the standard deviation equals 9.4.

Quay gives the means and standard deviations for a population of 245 normal students in a regular high school, grades 9-12. The mean for this group was 2.15, with a standard deviation of 4.26.

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Table 1

Means and Standard Deviations of Study Variables

Variable	n	Mean	Standard deviation	Scale
Age	109	16.10	1.02	Range: 14-18
Depressed	109	5.86	4.38	Range: 0-22
IQ	107	94.50	15.24	Range: 85-117
CD Self-Report	109	7.66	4.80	Range: 0-14
RBC	109	17.12	9.10	Range: 0-44
Teen metaphor	109	15.01	6.70	Range: 0-30
Teen idioms	109	14.18	7.08	Range: 0-40
Teen questionnaire	109	10.90	5.73	Range: 0-19
Parent questionnaire	109	9.35	4.72	Range: 0-19

Note. Data on the dichotomous variables sex, bilingual, and SES were previously given in Chapter III under Subject Characteristics.

Idiom subscale scores of the Fullerton Language Test for Adolescents show a mean of 22.5 and a standard deviation of 7.10. This is for the age grouping 14-18. The n or these norms was in excess of 1,000. In the conduct disordered sample, the mean was 14.2, with a standard deviation of 6.51 ($n = 109$).

E. J. Ramsey (personal communication, March, 1992) pointed out that the relationship between his measures of parental coercive style and conduct problems tends

to account for approximately 15% of the variance. The correlation between the parents'
coercive style as measured by the parent questionnaire and teacher ratings on the RBC in
the study sample was .39 ($\underline{n}$ = 109), and accounts for 15% of the variance. This is the
exact magnitude of relationship that was expected from previous Patterson studies. These
data suggest that at least one of the purposes of this study was met, namely, to
demonstrate that CDAs do have deficiencies in at least 2 of the 12 figurative devices.

In Table 2, the intercorrelations between measures used to compute the three
latent measures are listed.

Contributions of Control Variables on
Figurative Competence

Table 3 reports the intercorrelations between the covariate measures and
measures of metaphoric comprehension, and ability to comprehend idioms.

Two correlations were significant. The age to metaphor comprehension is a well
established relationship where figurative ability increases with age. The correlation
between SES and metaphor comprehension is a finding that has previously been
observed by Winner (1988).

The age range of these subjects falls between 14 and 18. This should place them
at the upper end of the linear process of developing figurative competence. Age, even
with this truncated range, did account for a small amount of variance, $\underline{R}^2$ = .05.

Winner (1988) has suggested that SES may be related to the exposure to
figurative language, which appears to be a key factor in metaphoric understanding

Table 2

Correlations Between Multiple Measures of Key Variables

Variable type	Variable pair	Correlation
Dependent	RBC/Teen Self-Report	.59
Independent	Teen metaphor comprehension/ teen idiom comprehension	.67
Independent	Parent coercive style questionnaire/teen coercive style questionnaire	.44

Note. All correlation was statistically significant at the .01 level.

Table 3

Relationships Between Covariates and Figurative Competence

Independent variables	Sex	Age	SES	Bilingual	IQ	Depression
Metaphor comprehension	-.07	.24	.27	.07	.09	-.07
Idiom comprehension	-.10	-.11	-.16	-.08	.10	-.01

(Ortony 1979). If Winner's observation is correct, it would be expected that SES would

account for some portion of the variance in this study. SES was the only control variable

to account for any appreciable variance in the independent variables.

To examine the control variables for possible interaction effects, a factor analysis was conducted using all six variables. Principal factor analysis with varamax rotation was accomplished. The results are given in Table 4.

Using the factor loading criteria suggested by Nunnally (1983), only factor loading scores exceeding .50 were considered. The four factors that emerged from this factor study reflect the following interrelationships among the subjects. Factor I was a sex-age factor. It noted that the male subjects tended to be older than female subjects. Factor II might be called an SES factor. It represents the tendency for those who were

Table 4

Principal Components Factor Analysis Loadings for the Eight Control Variables

Dimension	Factor I	Factor II	Factor III	Factor IV
1. Sex	.72	.19	.09	.29
2. Age	.77	-.18	-.14	-.34
3. SES	-.14	.84	-.21	-.17
4. Bilingual	-.46	.65	.31	-.21
5. IQ	.30	.06	.11	-.90
6. Depression	-.03	-.04	.93	-.11
7. Eigenvalue	1.86	1.32	1.23	1.01
8. % of reliable variance	23.16	19.04	18.35	17.00

Note. Total reliable variance accounted for: 77.54.

bilingual to also have lower SES. Factors III and IV have single loadings. Factor III is a depression factor. It has high loading on depression. It was examined by reviewing plots of factor vector in factor space. The depression factor was orthogonal to the other three factors. A similar review of factor space was made for Factor IV. Factor IV loads only on IQ. It was orthogonal to Factors II and III. It shared some common variance with Factor I, but can be explained by the tendency for female subjects to have slightly higher IQ scores.

Computation of Key Variables

The key variables under investigation in this study are parents' coercive style and child's figurative language and degree of conduct problems. These three latent variables were measured twice using different instruments. In the case of the parents' coercive style and conduct problems, different raters were also used. The interrelationships between the key variables are given in Table 5.

The latent variables were computed using SPSS 6.1 version and principal component factor analysis, with a varamax rotation. In addition, factor scores were obtained and used to multiply by raw data score to develop latent variables for the regression coefficients used in the path analysis.

Control Variable and Key Variable Interaction

The addition of the control variable to the regression equation in the main had little impact on the key independent variables, metaphoric understanding, and parents'

coercive style. It was thought that age might be a significant factor, but this did not prove

to be the case. Age proved to be a negligible factor and could largely be ignored. The

lack of any interaction with age was unexpected. Age is a principal factor in figurative

ability. The lack of age and figurative ability is probably due to the truncated range in

this sample. The only other covariate that had potential for affecting the magnitude of the

dependent variables was SES. After examining the zero-order correlation, it appeared

that SES may be large enough to enter into regression analysis and account for a portion

of the total variance. SES was force loaded into the regression equation. The statistical

procedures are those provided by SPSS in version 6.1. The result was a reduction of the

relationship between the child's figurative competence and conduct problems from $r =$

.44 to $r = .38$.

Table 5

Zero-order Intercorrelations of Four Key Variables

Variables	Coercive style	Child figurative problems	Conduct problems
Coercive style	1.0	--	--
Child figurative competence	.33	1.0	--
Conduct problems	.39	.44	1.0

Note. All correlations are significant at the $p < .05$ level.

The final results of this study are reported in Figure 3. Reported are the path

coefficients for the causal model and the factor loading for each of the measures that

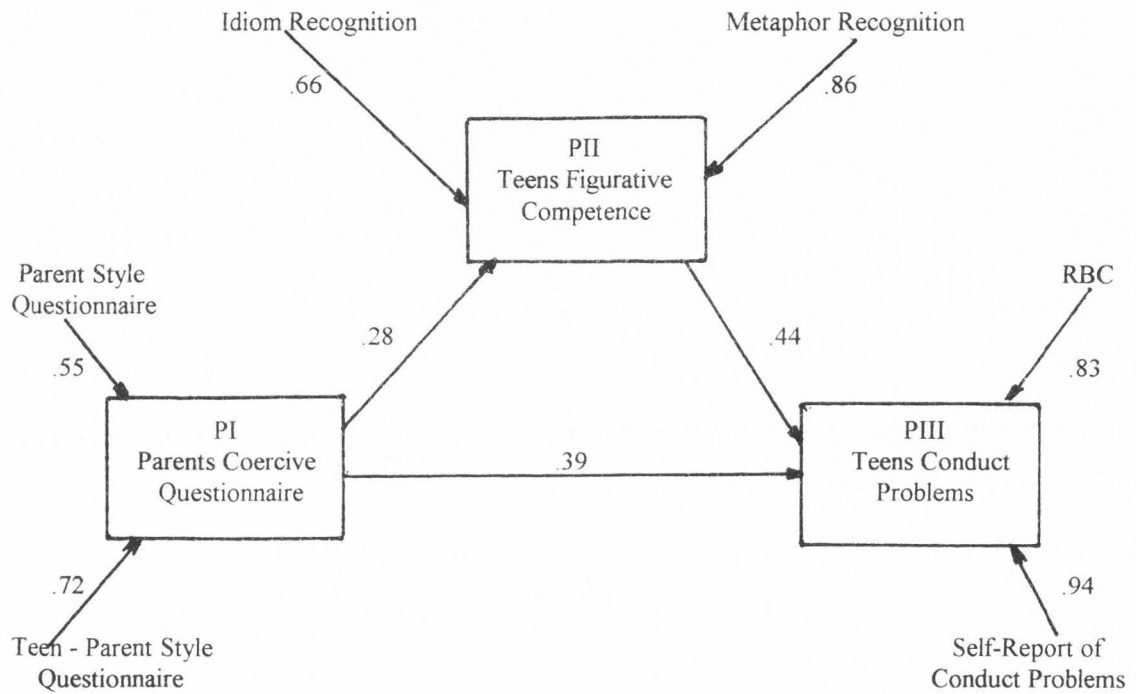were used to compute the three latent variables in the figure.

Figure 3. The causal model with path coefficients.

CHAPTER V

DISCUSSION

This chapter is twofold in nature. First, this section examines the results of the study in an attempt to relate it to previous research. Second, this chapter focuses on the process of demystifying the results. There is a large inferential leap going from literal language to conduct problems. If, as this study modestly suggests, these two latent variables are related, what are the mechanisms that might account for their relationship?

Interpretation

A large number of conduct disordered adolescents display communication problems. One explanation is that conduct problems and use of literal language develop from a single antecedent condition. Lack of figurative ability may, however, be only an interesting but trivial artifact. Another possibility is that the inability to use richer language forms is causal to the development of conduct problems. The simple zero-order correlation of .44 between ratings of conduct problems and figurative ability is promising. When this relationship is combined with other known factors that contribute to conduct problems, nearly 40% of the total variance in measures of conduct disorders can be attributed to known factors. This model was able to predict conduct problems, accounting for more variance than existing models. The causal model developed by Patterson and Reid (1984), using parental inept discipline as a predictor of conduct problems, accounts for 16% of the total variance in the dependent measure. Similarly, a

causal model was developed by Olwens (1980) using negative parental discipline and mothers' tolerance for acting out, combined to account for 10% to 15% of the variance in the dependent variable, teen aggression. Walker (1993), when examining the model used in the Patterson and Olwens studies, suggested that a finding that accounted for 10% to 15% of the variance between literal language and conduct problems would be the maximum that might be expected. Walker suggested that this relationship would not be a strong one due to the disparate nature of the measures. The magnitude of the relationship in this study between the two measures certainly exceeded these modest expectations.

Of the many attributes of CDAs, their language would be one of the easiest to assess. If communication problems begin as early as age 4 or 5, early identification would be feasible. The early identification of this troublesome population could prove to be invaluable. The finding also has implications for determining those young children who may be at risk for later developing conduct problems. Remedial programs to address communication problems could start at early ages.

In addition to the principal finding of this study, there was a lack of variance accounted for by the control variables. With the exception of age, the literature suggests that each of the control variables selected for this study might account for significant amounts of variance. Contrary evidence, however, suggested these covariates would not account for appreciable amounts of variances. For example, Baker and Cantwell (1985) found that only age and communications problems were predictive of psychiatric problems. This study involved a large sample size. Discriminant analysis was used to separate their sample of 625 subjects into two groups: (a) troubled teenagers and (b)

normal subjects. These children all received services from a speech clinic. All of the control variables examined in this study were not predictive of the communications problems group.

The two control variables that did account for some variance in this study were age and SES. Age was a primary factor identified by Baker and Cantwell, and some degree of association would be expected. The other variable (SES) has previously been observed in research by Winner (1988).

The addition of SES as a control variable in this study had the effect of reducing the zero-order correlation between metaphoric ability and conduct problems. The change, however, was small, and SES accounted for slightly less than 5% of the total variance in the multiple regression equation. Based on Winner's (1988) work, SES might have accounted for more variance. The correlation between SES and conduct problems ($r = .27$) may be explained by the coding system used for SES. Only two codes exist: did or did not qualify for free school lunch. The inability of the measure to take into consideration finer gradations of the variable could have affected the correlation. Information collapsed into two categories would tend to reduce the magnitude of this correlation.

The depression control variable, the "AW" from the RBC, failed to account for appreciable amounts of variance. Examination of the 11 items in the "AW" scale suggests that the scale is directed at measuring anxiety as well as depression. Seven items of the 11-item scale relate to anxiety. Future studies may well use a more appropriate measure of depression such as the Beck Depression Inventory (Beck, 1976).

The literature provides evidence that there is a relationship between language, communication deficits, and behavior problems. Poor language skills appear to be causal to behavioral problems. This study suggests a unique dimension of these language deficits may be the inability to comprehend figurative language. It has been a widely held clinical belief that children with conduct problems have a literal, direct, and forceful style of language. This is supported by recent empirical examinations of the language patterns of CDAs (Berger, 1998). In a pilot study with 27 adolescents from a high school psychology class, the correlation between self-report of conduct problems and figurative ability measured by paraphrase of metaphors out of context yielded a correlation of $r = -.47$. The current study modestly suggests that a specific language deficit of this population is their inability to use figurative language.

<div align="center">Possible Mechanism Linking the Nonuse of Figurative

Language to Conduct Problems</div>

Anger is the most obvious of the possible mediating variables relating literal language to conduct problems. There are several aspects of anger that could act as a mediating variable. First is the close relationship between frustration and aggressive anger. This is a possible scenario: Bob is a lonely CDA. He approaches an acquaintance and suggests they go get drunk. His associate replies, "No, when you've got a snout full, you're a junkyard dog." If the message, "You're a mean drunk" was missed, the literal message received was "You're a dog." Is the CDA frustrated? Probably. Angry? Maybe. The mechanism relating CD behavior and literal language might be as simple as

Dollard's (1939) now classic frustration-aggression hypothesis. Dollard noted that the principal source of aggressive behavior was due to frustration. His hypothesis is that there is a direct linear link between the two variables, with frustration causing aggression.

The duration of anger in CDAs is worthy of note. While anger is usually a short-lived emotion in most people, CDAs have been described as chronically angry (Tavris, 1982). Is such anger due to the failure of some hypothetical failsafe system in CDAs? Might it be that the CDA is perpetually angry because he is perpetually provoked? Suppose a CDA has a poor understanding of novel metaphors and a modest understanding of reified metaphors. The CDA might live in a perpetual state of frustration. Might his solitary lifestyle be an attempt to avoid social interaction that brings about such misunderstanding? Would this misunderstanding lead to social rejection? From another perspective, the CDA perhaps maintains his isolation because he simply does not know how to change it.

Poor Social Skills

Patterson and Reid (1984) have developed a model that explains the nature of alienation among CDAs. These adolescents are motivated primarily by negative reinforcement. They are able to find a little respite when they comply with parents. Mother feels the only way she can get things done is by perching on the CDA's back. The CDA feels mother is being vindictive. "Sometimes love means saying no" is a metaphor that does not compute for the CDA.

Patterson and Reid (1984) also suggest that eventually a CDA learns coercion as an operating style. They carry this style off to school with them. The result is they dislike authority figures. Adult authority figures are constantly telling them what to do. Does the telling become more direct and more demanding as the telling is opposed by oppositional behavior? Do both authority figure and CDAs get caught up in repeating and repeating the same behavior, hoping for a different result? Does a steady diet of seemingly contradictory instructions cause them to isolate and feel unsupported by family or friends?

Not only does this direct confrontive style alienate the child from adults, but such actions set the child out as different. The child is rude, abrupt, and demanding. They set themselves up to be victimized by other children. In the single study located in the literature reported by Ramsey et al. (1992) on female CDAs, rejection by same-sex peers in grades 4 through 6 was the best predictor of later antisocial acts. Does the fact that this crucial age for developing domain mapping strategies suggest that failure to develop age-appropriate social skills might relate this to figurative ability that fails to develop?

It is the basic tenant of this study that CDAs are not only deficient in metaphoric ability, they are also overly literal and direct. This comes about as a socialization process. The lack of exposure to figurative language and being caught up in coercive interaction styles impoverishes their language skills. These inept language skills, in turn, place the child at risk of high levels of frustration and aggression.

Some Additional Surmises

The double bind. Perhaps the most direct mechanism for relating these two divergent domains is the double bind. The double bind is a concept developed by Bateson, Jackson, Haley, and Weakland (1956). Bateson is recognized as the intellectual father of family therapy. Bateson observed that families who have pathological children have two common elements: (a) they have extremely maladaptive communications, and (b) there is a general lack of leadership in such families. In addressing the communications problem, Bateson suggested that there are no verbal messages that have singular meanings. He discussed these multiple messages as occurring at different levels. For example, if I greeted you with the phrase, "Nice to see you," but I looked away as I spoke, you would get an incongruent message. Bateson suggests that these incongruent messages are the root of psychopathology. When this type of double message is pushed to an extreme in a social environment where the message cannot be ignored, a double bind results. A double bind is more than a statement like "Have you stopped beating your wife?" Double binds can be very subtle. A CDA's mother may observe, "You're not wearing the new shirt I got you." This is a subtle double bind. If the child answers, "You're right; I don't like the shirt," the child has set the stage for open conflict. He might answer, "You're right; I'm not wearing the shirt." At another level of abstraction, the child is saying, "I don't like the shirt." This answer may avoid open conflict, but will at best elicit a frown. This is the essence of the double bind: regardless of one's response to a double bind statement, it will be negative. Bateson further gives the following as a

definition of a double bind: "The best example of a double bind is when a metaphor is taken literally" (Bateson et al., 1956, p. 77)

Haley (1985) has observed that the child exposed to a constant stream of double binds may polarize in one of two directions. Internalizers move toward psychotic processes to escape the double bind. Bizarre behavior redirects parents' attention. Language would become firm and direct. In this way, the child avoids the literal metaphor double bind. Externalizers move toward conduct problems. The CDA more willingly trades negative consequences for avoiding the double bind.

Digital thinking in an analog world. A primary premise of this study is the conceptual metaphor of remediation. The word implies that the CDA who needs remediation is either broken or diseased. The focus of such approaches is on symptoms reduction. The opposite of this position might be that the clinician adopt the approach that metaphors are prescriptive, namely, an individual tends to act out his personal metaphors of self and reality.

The best example of this approach is Kelly (1965). In Kelly's personal construct psychology, psychiatric labels such as anxiety and depression are superfluous, mere extra baggage. Kelly's initial assumption is that the primary drive in humans is the need to predict and control the environment. Individuals develop a system of personal constructs (conceptual metaphors) that guide attempts to structure reality. According to Kelly, a person's personal constructs are largely a product of language and verbal reasoning. The key question here is to ask what kind of analog thinking might take place in an individual with a digital mind.

Quality of Responses

There was one feature of the data generated by this study that was compelling. The qualitative aspects of the data appeared as informative as the quantitative data. In reading through the data, there is a striking contrast between metaphorically competent teens and those who do not use figurative language. There was a distinct flavor to the data. The best way to summarize the responses of those subjects with little figurative ability would be to call them ossified. They failed to display any understanding of the figurative process. The process of petrification was obvious. There seemed to be an all-or-none quality to the data. Those with little metaphoric ability seemed to do poorly across all figurative materials. Some had a humorous quality, for example the literal teen who responded to the idiom "to pull the wool over their eyes" with "to take their sweater off." Some examples would be the best way to illustrate these differences.

Three sheets from the sample were selected. They were matched according to sex, age, IQ, nonbilingual. The three varied widely on their RBC scores. All were male, age 16, IQ 96-101, English-speaking only, and had not had free school lunch the previous year. The following narrative might provide insight into the nature of their responses:

Metaphor 1, the easiest of the metaphors, is: "John stood on a hill and watched the river in the valley below. He said to Mary, 'This river is a snake.' What did John mean?"

Subject One, with a low RBC score (few problems), said, "The river moved fast and goes in all kinds of directions."

Subject Two, with a moderate RBC score, said, "John meant that the river slithers like a snake."

Subject Three, with a high RBC, responded, "John meant the river was like a snake."

Idiom #1 of the Fullerton LTA is: "Pull the wool over one's eyes."

Subject One replied, "Lie to someone."

Subject Two responded, "Do something they don't know about."

Subject Three: "Dont [sic] know."

Metaphor 15, the most difficult metaphor, is: "After watching a Spike Lee movie, Conrad said to Jessica, 'Prejudice is ignorance in disguise.' What did Conrad mean?"

Subject One replied, "If you know more about people, you might like them."

Subject Two responded, "Being prejudice [sic] is dumb."

Subject Three said, "The two of them can't agree."

Idiom #3 is: "Put your cards on the table."

Subject One replied, "Put all things down; to tell the truth."

Subject Two responded, "To say what you mean."

Subject Three, "You [sic] in a card game."

CHAPTER VI

CONCLUSION

The purpose of this study was to examine the relationship between the literal use of language and the development of conduct problems in adolescents. The essential research question asked was, "Is there enough common variance between these two domains to warrant further investigation?" While small, there appears to be enough shared variance to proceed.

This chapter is divided into two parts. The first presents the limitations of the study. The second suggests future studies that might expand on the relationship noted in this study.

Limitations of the Study

From the viewpoint of external validity, the greatest limitation of this study involves the population from which the subjects were drawn. Without control groups, only two comparisons with normative groups were possible. The selection of a population drawing heavily from an intercity area would suggest that there should be no attempts to generalize the study. The proportions of the school population failed to match the proportions of the general population, namely, overrepresentations of males, low SES, and low IQ level. This was why the sample was selected. It is more like CDAs in general than the general population. For example, the greater Ogden area has only 7% of its population listed as Hispanic in the 1990 census. While ethnic data were not

collected, a high number of subjects in this sample spoke Spanish as a second language. These observations are, however, somewhat less than salient. The purpose of the study was to explore, not to illuminate.

Nippold (1988) has noted a natural decline in metaphoric production in ages 8 and 9. Nippold holds that this decline is an artifact of a child abandoning fantasy play for more realistic play activities. Carmelli (1991) suggested that there may be two separate metaphoric abilities related to age. The first strategy relies on analogous thinking of similar items. At age 10 the similarity strategy is abandoned in favor of domain mapping

The heart of the matter involves the several serious threats to internal validity. The most serious limitation was the selection process used in obtaining subjects. It should be pointed out that only 58% of the original group volunteering to serve as subjects were included in the analysis. While some exclusions were made on the basis of predetermined rationale, a large number were excluded from the sample due to their failure to follow through in returning the parent packet. The subjects were volunteers. A review of this nonresponding group suggests that it tended to be older males. The fact that the nonresponding group varied in a consistent way from the group used in the analysis suggests that the selection process may have introduced a variety of uncontrolled effects.

The failure to directly exclude socialized CDAs was a weakness of this study. It should be pointed out, however, that the addition of this group would have had the effect of adding error to the variance pool This in effect would probably have reduced the magnitude of relationships in question.

The selection of this population was made to insure that there were enough CDA subjects to lend some credence to the results. The process of selecting this group was tantamount to truncating the range of normal through conduct disordered subjects. This sample would represent only the extreme upper end of a normal distribution. This would have a ceiling effect that may mask the magnitude of the figurative to CD relationship in a normal population.

The suggested direction of causality in the causal model is tenuous at best. The study needed a starting point, and the assumed direction of causality, however tentative, was better than other assumptions that were without support.

Future Studies

This study suggests the necessity of follow-up research to replicate these findings. Care should be taken to improve the internal validity of this study by replicating it with a broader sample base. It might be noted that the variances associated with metaphoric ability are quite large. This was due to a small cluster of outliers who were rated by teachers as having moderate conduct disorder, but scored well on the measures of figurative ability. Greater control should be designed to eliminate the possible influence of socialized CDAs. It would seem essential to conduct a study to test the direction of causality in this study. The direction of the path arrows is tenuous. It is Carmelli's (1991) contention that there are two types of metaphoric understanding: similarities used by young children, and domain mapping used by children age 9 and older. This would suggest that if CD children understood similarity-based metaphors but not domain

mapping, the path arrow might lead in the opposite direction. A finding that CDAs are deficient in both types of metaphoric understanding could strengthen the current model.

It would also appear that a study involving CD families, as opposed to normal families, would be another productive exploratory study. Variables in such a study might include those suggested by Patterson (1982). They include lack of responsibility setting, harsh discipline, inconsistent discipline, and lack of monitoring time away from parents. These could be used as independent variables that would regress against literal language usage.

An additional study might examine the assumed fact that the direct literal language of CDAs is actually deficient in figurative comprehension. Other measures of figurative competence would provide support of the position that the CDA is deficient in general figurative ability rather than just metaphoric understanding. This study sampled only two of twelve figurative devices. Other measures might include irony. According to Winner (1988), irony is the most difficult of literary devices to master. There are some clinical observations (Gardner, 1996) that CDAs have a limited understanding of humor. Humor is included as a figurative device by many researchers (Winner & Gardner, 1993). Humor has been established as a natural mechanism for reducing stress and anxiety (Klein, 1989). Humor also allows individuals to distance themselves from problems and take a fresh perspective of their situation.

A factor analysis study of figurative devices and CD variables (Kazdin, 1987) might provide insights into the nature of such relationships. Canonical correlation studies might suggest the magnitude of such factorial relationships.

Perhaps a primary goal of such studies would be to construct a complex model that might be confirmed by confirmatory factor analysis. To construct such a model, the problem of the direction of causality would need to be resolved first. Such a model would be far different from the current one if, for example, the relationship between coercive style and language deficits was cyclic and recursive.

The ultimate study would, however, involve a large-sample longitudinal study that would track the development of language and conduct problems. A repeated measures design would add much to our understanding of the processes that may underlie the relationship between the two domains.

Summary

It has been a fundamental assumption of this study that CDAs are socialized into that role. As a child in a dysfunctional family grows, he is subjected to a variety of influences that shape problematic behavior. Previous research has identified these influences as harsh punishment, inconsistent parenting practices, lack of parental support, lack of responsibility setting, lack of monitoring, and acceptance of negative behavior. In this negative environment, the family members learn to interact in coercive ways. They also learn to use direct, literal, and forceful language. The development of this literal language style may simply be a by-product of the family coercive interaction styles. Language might also be the vehicle of coercive processes. The level and style of language may well define the nature of coercive processes. This study suggests that language is more than a by-product. The style of language is implicated as a causal

factor. It can be argued that the inability of a child to use figurative speech places him at risk for the development of problems of conduct.

This study raises many questions. From those questions rises a single salient observation concerning the relationship between CDA and the nonuser of figurative language: "We need a better metaphor."

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APPENDIXES

Appendix A

Twenty-Two Quay-Peterson "CD" Items

Revised Behavior Problem Checklist

1. Seeks attention; "shows off."

2. Disruptive, annoys, and bothers others.

3. Fights.

4. Has temper tantrums.

5. Disobedient; difficult to control.

6. Uncooperative in group situations.

7. Negative; tends to do the opposite of what is requested.

8. Impertinent; talks back.

9. Irritable, hot tempered, and easily angered.

10. Argues; quarrels.

11. Sulks and pouts.

12. Persists and nags; can't take "no" for an answer.

13. Tries to dominate others; bullies; threatens.

14. Picks at other children as a way of getting their attention; seems to want to relate, but doesn't know how.

15. Brags and boasts.

16. Teases others.

17. Selfish; won't share; always takes the biggest piece.

18. Not liked by others; is a loner because of aggressive behavior.

19. Cannot stand to wait; wants everything right now.

20. Refuses to take directions; won't do as told.

21. Blames others; denies own mistakes.

22. Deliberately cruel to others.

Appendix B

Eleven Quay-Peterson "AW" Items

(Depression scale of the Revised Behavior Problem Checklist)

Item #	Item
4	Self conscious; easily embarrassed
6	Feels inferior
9	Shy; bashful
14	Lacks self confidence
21	Hypersensitive; feels easily hurt
22	Generally fearful; anxious
27	Depressed or sad
53	Says nobody loves him/her
64	Difficulty making choices
70	Afraid to try new things
84	Feels he/she can't succeed

Appendix C

Fourteen Adolescent Self-Report of Conduct Problems

My ID # is _____

I am male _____ female _____

I am _____ years old

Instructions: Read each of the following fourteen statements carefully. Check either true or false as the statement applies to you. If you are unsure if it is true or false, try to decide if it is mostly true or mostly false and mark it accordingly.

<u>True</u>   <u>False</u>

_____   _____   1.   My grades are average or above average.

_____   _____   2.   I don't worry much about tomorrow.

_____   _____   3.   I tend to act before I think.

_____   _____   4.   I don't care about other people's problems.

_____   _____   5.   I think of myself as a loner.

_____   _____   6.   I often talk back to teachers.

_____   _____   7.   I get into a lot of hassles.

_____   _____   8.   I am presently failing one or more classes.

_____   _____   9.   I have a lot of control over my anger.

_____   _____   10. I feel sorry for people who have problems.

_____   _____   11. My social skills are better than average.

_____   _____   12. I have a lot of close friends.

_____ _____ 13. I haven't been in a fight all year long.

_____ _____ 14. I would get along better if I were less aggressive.

Appendix D

Thirty Metaphors Sorted into Three Categories of Difficulty

Easy, Moderate, and Difficult

1. Raindrops are the sky's tears.

2. A circus clown is loneliness dressed up.

3. Jealousy is a green eyed monster.

4. Some jobs are jails.

5. The sunset is silent music.

6. Happiness is a warm winter coat.

7. Butterflies are rainbows.

8. Television is an opiate for creativity.

9. Informers are the gold of criminal justice.

10. Some surgeons are butchers.

11. Tom was a sponge.

12. Old age is molasses in action.

13. The river is a snake.

14. The surf on the seashore is a symphony.

15. Reputations are but fleeting ghosts.

16. The discussion was a wind storm.

17. Alcohol is spiritual putty.

18. The moon is the earth's kite.

19. Suspicion is quicksand.

20.   Genius is perseverance in action.

21.   David's nose was a grapefruit.

22.   Her manner was a summer breeze.

23.   Revenge is dark chocolate.

24.   The spider web is silver lace.

25.   Trust is a relationship's glue.

26.   Prejudice is ignorance in disguise.

27.   The coach was a volcano.

28.   The argument was a one-punch fight.

29.   Words are a poor sixth man to the grieving.

30.   Her earrings were truck tires.

Appendix E

Fifteen Q-Sorted Metaphors in Context

(Listed in Order of Difficulty)

1. John stood on a hill and watched the river in the valley below. He said to Mary, "The river is a snake". What did John mean?

2. Bob picked up Penny after work. When she got into the car she said, "Some jobs are jails." What did she mean?

3. Angela watched a spider spinning a web, she thought to herself, "The spider web is silver lace." What did that thought mean?

4. Carlos watched the coach talking to his players. He commented to Joel, "The coach is a volcano." What did Carlos mean by that statement?

5. Debra looked at the sun setting across the lake. She said to herself, "The sunset is silent music." What did Debra mean?

6. Lori didn't want to see Frank anymore. When he asked why, she said, "Trust is a relationship's glue." What did she mean by that statement?

7. Keli's radio was missing; she thought Mary had taken it. She asked Jon about it. He told her, "Suspicion is quicksand." What did Jon mean by that?

8. Zak was walking in the field. He saw a butterfly. He said to himself, "Butterflies are rainbows." What did Zak mean?

9. Brad was looking at one of the pictures that Sherri had taken of the sea coast. When he asked about it, she replied, "The surf on the seashore is a symphony." What did she mean by that statement?

10. Tim and Misty were walking in the moonlight. Tim told Misty, "The moon is the earth's kite." What did Tim mean?

11. Maurice wants to get even, but his girl friend told him, "Revenge is semi-sweet chocolate." What did she mean by that statement?

12. Nathan watched an old couple climbing some stairs. He thought to himself, "Old age is molasses running down hill." What did that thought mean?

13.   Carol laughed at the circus clown, but thought to herself, "A circus clown is loneliness all dressed up." What did Carol's thought mean?

14.   Joan was feeling guilty. She said to herself, "Reputations are but fleeting ghosts." What did she mean by that?

15.   After watching a Spike Lee movie, Conrad said to Jess,"Prejudice is ignorance in disguise." What did Conrad mean?

Example metaphor included in the instructions:

Bert and Sarah were having a serious talk while they walked in the rain. Sarah held out her hand and caught some rain drops. She said to Bert, "Raindrops are the sky's tears." What did Sarah mean?

There is no single right answer about what this statement means. One teenager explained it this way, "Rain comes down in little drops of water just like tears."

Another teenager said, "Raindrops clean the sky from smog and dust like tears clean your eyes."

Another teenager said, "Tears come when you're depressed and rain drops come when its dark and cloudy outside like the earth is depressed."

Any of these answers explain what Sarah meant.

Appendix F

Twenty Idioms Used in Idiom Recognition Task

Item #	Item
1	Pull the wool over one's eyes.
2	Put the cart before the horse.
3	Put your cards on the table.
4	Runs in the family.
5	Run true to form.
6	See eye to eye.
7	Take a back seat.
8	Take a joke.
9	Take the bull by the horns.
10	Take the wind out of someone's sails.
11	Throw a monkey wrench into it.
12	Throw light on it.
13	Talk shop.
14	Throw one's hat in the ring.
15	Turn over a new leaf.
16	Barking up the wrong tree.
17	Burning the candle at both ends.
18	Under the weather.
19	Cat's got your tongue.
20	Chip on one's shoulder.

Appendix G

Parent Interaction Style Questionnaire

1. When I talk with my son/daughter, he/she most of the time will:
   a. listens to what I have to say.
   b. rarely listens to what I have to say.

2. My attempts to talk with my teenager usually result in:
   a. our agreeing on a solution.
   b. an argument over who is right.

3. When I try to give my child household jobs, the result is usually:
   a. the child doing the jobs.
   b. an argument.

4. When I try to correct my teenager for a mistake, the result is often:
   a. my child listens and accepts the criticism.
   b. my child develops a negative attitude and refuses to listen.

5. When my child leaves to go to a friend's house for the evening, he/she will usually:
   a. obtain permission to go.
   b. lie or go without permission.

6. When there are regular household work assignments to be done, I usually:
   a. tell my child what is expected.
   b. explain what is expected.

7. For me to get my child to follow through on a task, I:
   a. need to occasionally remind my child to get the task done.
   b. must argue and fight to get it done.

8. I would describe the power struggle between me and my child as:
   a. very serious and difficult.
   b. about the same as other parents and teens.

9. When my teen returns from a date or school activity, we will:
   a. usually talk about the activity.
   b. rarely talk about the activity.

10. How would you rate your teenager's respect for you as a parent?
    a. a great deal of respect.
    b. little or no respect.

11. When I disagree with my teen, our discussions usually end up:
    a. in a compromise.
    b. in yelling matches.

12. When my child refuses to listen, my usual way of dealing with that is to:
    a. try to reason with him/her.
    b. whine or yell at him/her.

13. Perhaps my greatest fault in dealing with my teen is my tendency to:
    a. humiliate him/her.
    b. resort to yelling.

14. When arguments with my teenager become very heated, I tend to:
    a. become sarcastic and use put downs.
    b. use physical force to get my point across.

15. How often do you praise your teen for positive actions?
    a. daily.
    b. occasionally when praise is deserved.

16. How often does your teen openly defy you?
    a. almost daily.
    b. once a week or less.

17. If you and your teen argue, who usually wins?
    a. you.
    b. him/her.

18. What kind of punishments do you use for misbehavior?
    a. grounding or time out.
    b. restricted privileges, e.g., driving.

Appendix H

Teen Interaction Style Questionnaire

1. When I talk with my parent(s), they will:
   - a. listen to what I have to say.
   - b. rarely listen to what I have to say.

2. When I attempt to tell my parent(s) my point of view, the discussion usually results in:
   - a. our agreeing on a solution.
   - b. an argument over who is right.

3. When my parent(s) assign me work at home, I usually:
   - a. do the jobs.
   - b. stall, argue or leave.

4. When my parent tries to discipline me, I usually:
   - a. accept criticism or punishment.
   - b. I refuse to be disciplined.

5. When I leave to go out with friends, I usually:
   - a. leave without permission.
   - b. tell my parent(s) where I'm going.

6. When my parent(s) make household assignments, they usually:
   - a. tell me what to do.
   - b. explain to me what is expected.

7. When I begin a household chore, I usually:
   - a. start the job without a reminder.
   - b. need several reminders before I begin.

8. I would describe the power struggle between me and my parent(s) as being:
   - a. very serious and difficult.
   - b. about the same as other teens and their parent(s).

9. When I return home from a date or school activity I:
   - a. usually talk about the activity.
   - b. rarely talk about the activity.

10. I would rate the level of trust my parents have for me as:
   - a. little or no trust.
   - b. a good deal of trust.

11. When I and my parent(s) disagree, our discussion usually ends up:
    a. in yelling matches.
    b. in a compromise.

12. When my parent(s) refuses to listen to me, I:
    a. usually try to reason with them.
    b. whine or yell to make my point.

13. My greatest fault in dealing with my parent(s) is:
    a. becoming physical.
    b. yelling.

14. When discussions with my parents turn into arguments, I tend to:
    a. leave.
    b. use put downs and sarcasm.

15. My parent(s) praises me for doing things around the house:
    a. several times a week.
    b. once a week or less.

16. I openly defy my parent(s):
    a. almost daily.
    b. once a week or less.

17. If you and your parent(s) argue, who usually wins?
    a. my parent(s).
    b. me.

18. My parent(s) use what kind of punishment:
    a. grounding or withholding privileges.
    b. physical force.

Appendix I

Criteria Used to Score Metaphors

Items receiving zero score:

> Items left blank.
> Items containing a "don't know" statement.
> Items containing a direct restatement of the metaphor.
> Turning the metaphor into a simile (simply inserting the word "like" into the basic metaphor.

Items receiving a score of 1:

> A paraphrase that relates the topic to the vehicle where the ground specifying the relationship is not obvious. I require more than one examination to gain understanding.

Items receiving a score of 2:

> Paraphrase that captures fully the gist of the original metaphor. The topic and vehicle are linked by a ground that requires no further examination or explanation to determine the meaning of the metaphor.

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