USING CONJOINT BEHAVIORAL CONSULTATION

WITH CHILDREN WHO HAVE AUTISM:

EFFECTIVENESS, ACCEPTABILITY, AND

GENERALIZATION OF SKILLS

By

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CHAPTER ONE

INTRODUCTION

Introduction to the Research

Autism is a developmental disorder that is characterized by deficits in
social interaction and communication as well as the display of repetitive and
stereotyped patterns of behavior (American Psychiatric Association, 2000).
Deficits in social interaction include difficulty in forming attachments with other
individuals (Capps, Sigman, & Mundy, 1994), difficulty in the ability to imitate
another person's movements (Dawson & Adams, 1984), difficulty sharing
attention with another person (Mundy, Sigman, & Kasari, 1994), and difficulty
understanding another person's emotions or expressions (Hobson, 1989).
Deficits in communication include displaying echolalia, abnormal prosody, and
pronoun reversals (Cantwell, Baker, Rutter, & Mawhood, 1989). Repetitive
behaviors include rocking, toe walking, flapping of the extremities, and whirling
(Volkmer, Cohen, & Paul, 1986). They also include elaborate routines involving
the rearranging or ordering of items and insistence on sameness in daily
activities and routines (Wing, 1988).

Overall, studies suggest that the long-term prognosis for individuals with
autism is poor (Gillberg & Steffenberg, 1987). However, a follow-up study

suggests a more positive prognosis for young adults who have received

therapeutic services (Kobayashe, Murata, Yoshinaga, 1992) and special

education services (Venter, Lord, & Schopler, 1992) during their childhood.

Autism affects approximately 7-13 per 10,000 children (Bryson, Clark, & Smith,

1989) with a mean age of onset at approximately 12.7 months (Volkmar, et al.,

1994). The disorder is also three to four times more common in males than

females. Steffenberg and Gillberg, (1986) suggest that the occurrence of autism

is not affected by social class.

There are several reasons for the assessment of autism: diagnosis,

intervention, and for a combination of diagnosis and intervention (Mash & Terdal,

1997). Diagnostic assessment for autism includes the assessment of cognitive

abilities and diagnostic checklists. Assessments used for developing

interventions for children with autism include a descriptive assessment.

Assessments for a combination of diagnosis and intervention include: cognitive

abilities, diagnostic checklists, adaptive behavior scales, interviews, and

observations (Mash & Terdal, 1997).

Psychoanalytic treatments were originally used as interventions for

children with autism (Bettelheim, 1956). It was soon determined, however, that

psychoanalytic approaches to the treatment of autism were not effective or

appropriate, and even harmful at times (Kanner, 1943). Behavioral researchers

determined that some of the problems of children with autism were amenable to

procedures derived from behaviorism (Lovass, Berberich, Perloff, & Schaeffer,

1966; Lovass, Freitag, Gold, & Kassorla, 1965). Recent research suggests that

consultation could also be an effective intervention for children with autism Schreibman & Anderson, 2001).

Caplan's mental health consultation model (1970) originally defined consultation as occurring between professionals and pertaining only to work-related concerns. Since then, however, application of the consultation process has been advanced by others (Brown, Pryzwansky, & Schulte, 1998; Heller, 1985; Lippit & Lippit, 1986; Sheridan, 1993) to include interaction between a consultant and a wide variety of individuals and systems. The promise of collaboration methods for addressing issues in children's education, in general, and parent-school interaction, in particular, have been highlighted by a number of authors (Bergan, 1977; Bergan & Kratochwill, 1990, Conoley, 1987; Galloway & Sheridan, 1994). Behavioral consultation has typically been the model of choice when working with children based upon the aforementioned literature.

Conjoint Behavioral Consultation (Sheridan & Kratochwill, 1992) as a consultation model was developed with a basis in behavioral consultation (Bergan, 1977). Sheridan and Kratochwill define Conjoint Behavioral Consultation (CBC) as:

> a systematic, indirect form of service delivery, in which parents and teachers are joined together to address the academic, social, or behavioral needs of an individual for whom both parties bear some responsibility. It is designed to engage parents and teachers in a collaborative problem-solving process with the assistance of a consultant,

wherein the interconnections between home and school systems are considered crucially important. (p. 122)

Research has demonstrated the effectiveness of CBC in addressing a variety of problem behaviors presented by children, as well as when comparing it to other singular consultation methods. The CBC model has been demonstrated to be effective when addressing academic concerns related to completion of assignments, in addition to, accuracy of the completed work (Galloway & Sheridan, 1994), eliminating irrational fears in children (Sheridan & Colton, 1994), and increasing cooperative play behavior among children (Colton, Sheridan, Jenson, & Malm, 1995). Sheridan, Eagle, Cowan, and Mickelson (2001) showed favorable results with regard to efficacy, acceptability, and satisfaction. Limitations of these studies include the dependence on self-report outcome and treatment integrity data provided by parents and teachers.

The use of CBC when addressing the needs of children with autism appears to be promising. Collaboration between settings is a central element in each stage of the CBC model. This collaboration between settings is important for children with autism as they have a need for consistency between settings (Wing, 1988).

Children with autism tend to have difficulty with generalizing skills between settings. Stokes and Baer (1977) define generalization as:

> The occurrence of relevant behaviors under different, non-training conditions (i.e., across subjects, settings, people, behaviors, and/or time) same events in those without the scheduling of the same events

in those conditions as had been scheduled in the training condition (p.

350).

For children with autism, a collaborative model such as the CBC model, should

promote generalization of skills between settings.

Gutkin (1993) addressed research methodologies for consultation services

to children with suggestions for future research. He suggests greater

specifications of the processes involved in the consultation. The treatment

integrity of the consultation process, as well as implementation of the treatment

intervention, is also necessary when discussing the results, interpretations, and

conclusions. Gutkin also suggests the need for greater utilization of behavioral

observation data as opposed to self-report and attitudinal type data. The use of

small-n methodologies, ranging from one to three cases was also proposed by

Gutkin. A small number of consultation cases will allow the researcher to define

in greater detail the specific consultation process; to collect data pertaining to the

integrity of the consultation process, as well as, the integrity of the

implementation of the intervention; to gather observational data for the

consultants, consultees, and clients; to conduct follow-up after completion of

consultation; and to determine if the consultation process used in the research is

representative of what is used by practitioners.

Statement of the Problem

Children with autistic disorder have been studied extensively. Much is

known about the diagnosis and behavioral interventions for reducing behavioral

excesses in children with autism. Previous research with interventions for

reducing behavioral excesses in children with autism has yielded a body of literature suggesting that trained service providers must implement direct service interventions in order to have effective outcomes; however, direct service interventions require a significant amount of time, money, and energy. Thus, there need to be alternatives to direct service intervention for children with autism. Of particular interest is the integration of resources in working with these children. An alternative to direct service intervention is a consultation model which could be used to train teachers and parents the skills to effectively reduce behavioral excesses in children with autism. Another interest is the generalization of skills across settings for children with autism. Previous research suggests that children with autism have difficulty with the generalization of skills between home and school (Mash & Barkley, 1996). Conjoint Behavioral Consultation is a consultation model that integrates home and school within the intervention and which should, therefore, promote generalization of skills between settings.

These are important issues that must be addressed as children are being increasingly diagnosed with autistic spectrum disorders.

Purpose of the Study

The conceptual bases of the Conjoint Behavioral Consultation (CBC) model suggest potential for positive outcomes when used with parents and teachers of children with autism. Thus, the purpose of this study was to investigate the effectiveness of CBC in promoting the success of elementary and secondary school age children with an IDEA eligibility of autism when addressing behavioral excesses in the special educational classroom, regular education

classroom, and the home. Answers to the following substantive questions are integral to such a purpose, and consideration of the unique characteristics of children with a diagnosis of autism within the CBC structure results in the hypotheses that follow each question.

1. Does the application of consultation result in an effective intervention for reducing the levels of identified behavioral excesses across elementary and secondary school age children in special education with an IDEA eligibility of autism? The effects of the intervention will be evaluated by the Goal Attainment Scale and visual inspection of the difference between the baseline and intervention phase of the study using a multiple baseline design.

   Hypothesis: It is hypothesized that, for the participants in this study, the consultation process and the resultant treatments will produce effective interventions for elementary and secondary school age children in special education with an IDEA eligibility of autism.

2. Can the application of the Conjoint Behavioral Consultation Model result in an intervention that effectively reduces the levels of identified behavioral excesses across settings (special education classroom, regular education classroom, and home) for elementary and secondary school age children with an IDEA eligibility of autism? The effects of Conjoint Behavioral Consultation will be evaluated by the Goal Attainment Scale and visual inspection of the differences between the baseline and intervention phases of the study using a multiple baseline across settings design.

Hypothesis: It is hypothesized that, for the participants in this study, the consultation process and the resultant treatments will produce effective interventions for elementary and secondary school age children with an IDEA eligibility of autism.

3. Can generalization across settings be programmed to produce treatment effects for elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism? Generalization will be evaluated through the visual inspection of the difference between the baseline and intervention phases of the study using a multiple baseline across settings design.

Hypothesis: It is hypothesized that, for the participants in this study, generalization across settings will occur for elementary and secondary school age children with an IDEA eligibility of autism.

4. Is Conjoint Behavioral Consultation, between home and school, an acceptable model for the parents and teachers of elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism? The acceptability of the Conjoint Behavioral Consultation model will be assessed by the descriptive statistics of the Parent/Teacher Consultation Services Questionnaire (PCSQ/TCSQ).

Hypothesis: It is hypothesized that, for the participants in this study, the consultation process will be an acceptable model for the parents and teachers of elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism.

5. Will the parents and teachers of elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism find the intervention acceptable? The acceptability of the intervention will be assessed by the descriptive statistics of the Treatment Evaluation Questionnaire-Parent and Teacher Forms (TEQ-P and TEQ-T) and the Intervention Rating Profile –15 (IRP-15).

   Hypothesis: It is hypothesized that, for the participants in this study, the intervention will be acceptable as rated by the parents and teachers of elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism.

6. How will levels of intervention effectiveness relate to consultee integrity? Intervention effectiveness will be measured by consultee ratings on the Goal Attainment Scale (GAS) and visual inspection of the difference between the baseline and intervention phases of the study. Consultee integrity will be measured by the percentage of steps of the intervention completed by the consultee.

   Hypothesis: It is hypothesized that there will be a positive relation between consultee integrity and intervention effectiveness.

7. What is the relation between the consultee's acceptability of the intervention and consultee integrity when implementing the intervention. Consultee acceptability will be measured by the Treatment Evaluation Questionnaire-Parent and Teacher Forms (TEQ-P/T) and the Intervention Rating Profile-15

(IRP-15). Consultee integrity will be measured by the percentage of steps of the intervention completed by the consultee.

Hypothesis: It is hypothesized that there will be a positive relation between consultee acceptability of the intervention and consultee integrity when implementing the intervention.

CHAPTER TWO

REVIEW OF LITERATURE

Chapter Overview

This review of relevant literature will begin with a presentation of the history of autism including the first time the term was used, in addition to, when it was distinguished as a diagnostic entity. Next, the Diagnostic and Statistical Manual Fourth Edition, Text Revision (American Psychiatric Association, 2000) diagnostic criteria, as well as, the Individuals with Disabilities Education Act (IDEA) eligibility criteria, core symptoms, and the developmental course of the disorder will be discussed. This chapter will also discuss the autistic population in the United States by addressing the epidemiological issues of prevalence, age of onset, gender differences, social class, and cultural issues. Specific diagnostic issues, as well as, assessment procedures used in making a diagnosis of autism are also discussed. The history of the interventions that have been used in treating autism to the current behavioral interventions are also reported. Finally, this chapter will discuss single case design studies and programming for generalization within an intervention.

History of Autism

The term "autism" was first used by Bleuler in 1911 to describe individuals with schizophrenia who had a loss of contact with reality (Bleuler, 1911/1950). In 1943 Kanner described autism as a specific diagnostic entity involving impaired social relationships, language deficits, and restricted and repetitive interests (Kanner, 1943; Schriebman & Anderson, 2001). In his initial report, Kanner (1943) presented case studies of autistic children. He noted that these children had an "inability to relate themselves in the ordinary to people and situations from the beginning of life" (p. 242). Kanner also noted that children with this disorder had difficulties with language characterized by delayed language acquisition, echolalia, selective mutism, pronoun reversals, and literalness. Lastly, Kanner noted that these children also had an "obsessive desire for the maintenance of sameness" (1943, p. 245). In 1944 Asperger described a similar disorder to autism; however not as severe (Asperger, 1944/1991). These children were described as having deficits in social interaction, eye contact, affective expression, and conversational abilities (Asperger, 1944/1991). Asperger (1944/1991) believed that the disorder was present from two years of age and was characterized by an overall inability to form a connection with the whole environment. Unlike children diagnosed with autism, children diagnosed with Asperger's developed good language abilities. Even though these children had good vocabularies and grammatical abilities, they were impaired in their conversational skills and had unusual use of volume, tone, and flow of speech (Klinger & Dawson, 1996). It has not been until the past 5-10 years that

Asperger's Disorder has been described as a separate diagnostic entity (Klinger & Dawson, 1996).

<div align="center">Diagnostic Criteria</div>

<u>DSM-IV TR Diagnostic Criteria</u>

The Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition, Text Revision (American Psychiatric Association, 2000) lists the diagnostic criteria for Autistic Disorder (p.75) as involving:

A. A total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3):

    (1)   qualitative impairment in social interaction, as manifested by at least two of the following:

        (a)   marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction

        (b)   failure to develop peer relationships appropriate to developmental level

        (c)   a lack of spontaneous seeking to share enjoyment, interests, or achievement with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest)

        (d)   lack of social or emotional reciprocity

(2)   qualitative impairments in communication as manifested by at least one of the following:

    (a)   delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gestures or mime)

    (b)   in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others)

    (c)   stereotyped and repetitive use of language or idiosyncratic language

    (d)   lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(3)   restricted repetitive and stereotyped patterns of behavior, interests, and activities as manifested by at least one of the following:

    (a)   encompassing preoccupation with one or more stereotyped and restricted patterns of

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interest that is abnormal in either intensity or focus

    (b)   apparently inflexible adherence to specific, nonfunctional routines or rituals

    (c)   stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)

    (d)   persistent preoccupation with parts of objects

B.   Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, (3) symbolic or imaginative play.

C.   The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder.

The Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition, Text Revision (APA, 2000) lists the diagnostic criteria for Asperger's Disorder (p. 84) as involving:

A.   qualitative impairment in social interaction, as manifested by at least two of the following:

    (1)   marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction

    (2) failure to develop peer relationships appropriate to developmental level

    (3) a lack of spontaneous seeking to share enjoyment, interests, or achievement with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people)

    (4) lack of social or emotional reciprocity

B. Restricted repetitive and stereotyped patterns of behavior, interests, and activities as manifested by at least one of the following:

    (1) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal in either intensity or focus

    (2) apparently inflexible adherence to specific, nonfunctional routines or rituals

    (3) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)

    (4) persistent preoccupation with parts of objects

C. The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.

D. There is no clinically significant general delay in language

(e.g., single words used by age 2 years, communicative phrases used by age 3 years).

E. There is no clinically significant delay in cognitive development or in the development of age appropriate self-help skills, adaptive behavior, (other than in social interaction), and curiosity about the environment in childhood.

F. Criteria are not met for another specific Pervasive Developmental Disorder or Schizophrenia.

The primary distinctions between Autistic Disorder and Asperger's Disorder are that individuals with Asperger's Disorder do not display clinically significant delays in language, cognitive functioning, and adaptive behavior (Mash & Terdal, 1998).

<u>IDEA Eligibility Criteria</u>

In the education realm, Autistic Disorder and Asperger's Disorder fall under the umbrella eligibility of Autism. The Individuals with Disabilities and Education ACT (IDEA) 1997 defines Autism (1401(3) (A) and (B); 1401(26) as:

Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age 3, that adversely affect a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory

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experiences. The term does not apply if a child's educational performance

is adversely affected primarily because the child has an emotional

disturbance.

Autistic disorder, Asperger's disorder, and other pervasive developmental

disorders are known collectively as the "autistic spectrum" disorders (Wing &

Attwood, 1987) and occur on a continuum of pervasiveness and severity (Cohen,

Paul, & Volkmar, 1986).

<div align="center">Core Symptoms of the Disorder</div>

<u>Social Abilities</u>

Individuals with autism have significant deficits in their social abilities.

These include deficits in forming attachments with other individuals (Capps,

Sigman, & Mundy, 1994), engaging in the ability to imitate another person's

movements (Dawson & Adams, 1984), sharing attention with another person

(Mundy, Sigman, and Kasari, 1994), understanding another person's emotions or

expressions (Hobson, 1989), and engaging in imaginative play (Ungerer, 1989).

Research suggests that these impairments in social skills may not be caused by

an inability or lack of desire to interact with other individuals but tend to be due to

impairments in understanding and responding to social situations (Dawson,

1991). Examples of behavioral excesses within the area of social interaction that

are of particular interest may include: inappropriate eye contact, inappropriate

development of peer relationships, inappropriate gestures to regulate social

interactions, tantrums, aggression, self injury, and property destruction.

Language Abilities

Individuals with autism display significant deficits in language abilities with approximately 50% remaining mute throughout their lives (Rutter, 1978). Research indicates that children who develop gestural and other nonverbal skills are more likely to develop language (Mundy, Sigman, & Kasari, 1990). Individuals with autism who do have language abilities tend to display echolalia, abnormal prosody, and pronoun reversals (Cantwell, Baker, Rutter, & Mawhood, 1989). One of the most significant language deficits that individuals with autism have is in conversational abilities (Eales, 1993). Individuals with autism also tend to be concrete and literal in their comprehension of language (Paul, Fischer, & Cohen, 1988). Examples of behavioral excesses within the area of language abilities that are of particular interest may include: displaying echolalia, abnormal prosody, pronoun reversals, and repetitive use of language.

Cognitive Abilities

Between 76% and 89% of children with autism have significant deficits in cognitive abilities with intellectual ability scores falling below 70 (Steffenberg & Gillberg, 1986). These intellectual abilities tend to be stable after five years of age and predictive of later academic and work abilities, as well as independent living abilities (Lord & Schopler, 1989). Individuals with autism tend to display a specific pattern of cognitive abilities as they perform better at nonverbal visual-spatial tasks than verbal tasks (Happe, 1995).

<u>Repetitive Behaviors and Interests</u>

Children with autism often engage in repetitive motor behaviors (Volkmer, Cohen, & Paul, 1986). Behaviors observed in younger and lower functioning children with autism include rocking; toe-walking; arm, hand, or finger flapping; and whirling. Behaviors observed in older and higher functioning children with autism include elaborate routines involving the rearranging or ordering of items and insistence on sameness in daily activities (Wing, 1988). Children with autism also have intense interests with specific topics which often involve the memorization of facts (Wing, 1988). Examples of behavioral excesses, within the area of repetitive patterns of behavior, that are of particular interest may include: inflexibility in routines, repetitive motor movements (rocking; toe-walking; arm, hand, or finger flapping; and whirling), engaging in elaborate routines, insistence on sameness in daily activities and routines, and verbally displaying the memorization of facts.

Developmental Course

Overall, studies suggest that the long-term prognosis for individuals with autism is poor (Gillberg & Steffenberg, 1987). However, a follow-up study suggested a more positive prognosis for young adults who had received therapeutic services (Kobayashe, Murata, Yoshinaga, 1992) and special education services (Venter, Lord, & Schopler, 1992) during their childhood. Studies conducted by Gillberg and Steffenberg (1987) and Kobayashi, Murata, and Yoshinga (1992) suggested an aggravation of symptoms during adolescence. These studies showed an increase in autistic symptoms including

increased levels of hyperactivity, aggression, ritualistic behavior, and a loss of previously acquired language skills. Research also indicated that the two best predictors of more positive outcomes in later life are average intellectual abilities and the development of some language prior to age five (Gillberg & Steffenberg, 1987; Kobayashi, Murata, & Yoshinga 1992). The most persistent difficulty in both children and adults diagnosed with autism is their social impairment (Szatmari, Bartolucci, Bremner, Bond, & Rich, 1989).

<div align="center">Epidemiological Issues of the Autistic Population</div>

Prevalence

Autism affects approximately 4 to 5 per 10,000 children (Burd, Fisher, & Kerbeshian, 1987; Ritvo, Freeman, Pingree, Mason-Brothers, Jensen, McMahon, Peterson, Mo, & Ritvo, 1989). Recent research utilizing a broader diagnostic criteria found prevalence rates of 7 to 13 per 10,000 children (Bryson, Clark, & Smith, 1989; Steffenberg & Gillberg, 1986). This higher prevalence rate is attributed to broader diagnostic criteria, in addition to, improved awareness and recognition of the disorder (Bryson, Clark, & Smith, 1989; Steffenberg & Gillberg, 1986).

Age of Onset

The mean age of onset for autism is approximately 12.7 months (Volkmar et al., 1994). It is during this time that parents typically notice abnormal behaviors including social unresponsiveness, deficits in motor development, excessive quietness or irritability, repetitive motor movements, and language deficits. The

subsequent evaluation and diagnosis of autism in children is likely to occur

between 2 1/2 and 5 years of age (Ornitz, Guthrie, & Farley, 1977).

Gender Differences

Autism's occurrence is three to four times more common in males than in

females (Bryson, Clark, & Smith, 1989; Steffenberg & Gillberg, 1986). Even

though females are affected at a lower rate than males, they tend to have more

severe cognitive impairments (Bryson, Clark, & Smith, 1989; Steffenberg &

Gillberg, 1986).

Social Class and Cultural Issues

Steffenberg and Gillberg (1986) suggest that there are no social class

differences between the autistic population and those in the general population.

This means that social class does not affect the rate of occurrence of autism.

Epidemiological research for autism has been conducted around the world

including Canada (Bryson, Clark, & Smith, 1988), England (Wing & Gould, 1979),

France (Cialdella & Mamelle, 1989), Sweden (Steffenberg & Gillberg, 1986),

Japan (Sugiyama & Abe, 1989), and Hong Kong (Chung, Luk, & Lee, 1990). The

findings of these studies were consistent with research conducted in the United

States with regard to reports of prevalence, intellectual abilities, gender

differences, and social class.

Assessment of Autism

There are several purposes for the assessment of autism: diagnosis,

intervention, and a combination of diagnosis and intervention (Mash & Terdal,

1997). Currently, there are no biological indicators or medical tests for autism.

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Because of this, the diagnosis of autism is derived from behavioral

symptomatology (Klinger & Dawson, 1996). As with all assessments, the

diagnosis of autism should be based on multiple sources of information (parents

and teachers) across multiple settings (home and school) using multiple methods

(interview, observation, rating scales) (Klinger & Dawson, 1996).

Diagnostic areas for the assessment of children with autism are as

follows: language and communication, social, play and interests, and cognitive

abilities (Mash & Terdal, 1998). The assessment of children with autism

traditionally includes a cognitive assessment, an assessment of adaptive skills,

interviews with parents, observations of the child, checklists, and descriptive

assessments (Mash & Terdal, 1998; Volkmer, Ciccheti, Dykens, Sparrow,

Leckman, & Cohen, 1988).

Diagnosis

Cognitive. Cognitive assessments are administered to children with autism

for several reasons. They are helpful as a diagnosis in understanding if the

individual's social and language impairments are below what would be expected

for his or her cognitive functioning. They can also be used for predicting

academic achievement. Lastly, these assessments can be used to determine the

effectiveness of a treatment by using them in pre and post-test designs. The

Wechsler Intelligence Scale for Children-Third Edition (WISC-III) is often used to

assess the cognitive functioning of verbal children with autism while the Leiter

International Performance Scale-Revised (Leiter-R) is used to assess the

cognitive functioning of nonverbal children with autism. The Psychoeducational

Profile-Revised (PEP-R) has been specifically designed to assess the cognitive functioning of children with autism (Mash & Terdal, 1998).

The WISC-III is used by psychologists or trained professionals to assess the cognitive functioning of verbal children from 6.0 to 16.11 years of age (Sattler, 1992). The WISC-III contains 13 subtests, six of which contribute to the Verbal Scale and 7 of which contribute to the Performance Scale.

The Leiter-R is used by psychologists or trained professionals to assess the cognitive functioning of nonverbal, minimally verbal, or deaf children ranging in age from 2.0 to 20.11 years of age (Roid & Miller, 1997). The Leiter-R consists of 20 subtests which yield a Visualization and Reasoning Composite and an Attention and Memory Composite. The advantage of the Leiter is that it can be completely administered without verbal instructions.

The PEP-R has been specifically designed to assess the cognitive functioning of children with autism ranging in age from one to twelve and who are functioning at a pre-school level (Mash & Terdal, 1997). The PEP-R is used by psychologists or trained professionals and assesses several domains including: imitation, perception, motor functioning, eye-hand integration, cognitive-performance, and cognitive verbal skills (Mash & Terdal, 1997).

Checklists. Behavior checklists are another useful tool when conducting a diagnostic assessment for autism. The most commonly used checklists are the Autism Behavior Checklist (ABC) and the Childhood Autism Rating Scale (CARS) (Mash & Terdal, 1997).

The Autism Behavior Checklist (ABC) is a diagnostic screening instrument used by teachers in identifying children with high levels of autistic behaviors (Krug, Arick, & Almond, 1980). The ABC consists of 57 items divided into five categories: sensory, relating, body and object use, language, and social and self-help. The items are scored as present or absent and are weighted from one to four. Items with a weight of four are considered to be the best predictors of autism. The scores are then added together. A higher total score on the ABC indicates more severe levels of autism.

The Childhood Autism Rating Scale (CARS) (Schopler, Reichler, Renner, 1980, 1986) is the most widely used behavior checklist when diagnosing children with autism. It can be completed by a teacher, parent, or psychologist and it combines observations with a checklist. The CARS consists of 15 subscales in which the child's behavior is rated ranging from appropriate to abnormal: relationships with people, imitation, affect, use of body, relation to nonhuman objects, adaptation to environmental change, visual responsiveness, auditory responsiveness, near receptor responsiveness, anxiety reaction, verbal communication, nonverbal communication, activity level, intellectual functioning, and general impressions.

Treatment/Intervention

Descriptive Assessment. Descriptive assessments are conducted through analysis of the variables that are functionally related to the problem behavior. This analysis is conducted prior to implementation of interventions (Iwata, Vollmer, & Zarcone, 1990; Schreibman & Charlop, 1989). A descriptive behavior

assessment consists of operationally defining the specific characteristics of the target behavior, as well as the setting events, antecedents, and motivating consequences of the behavior. This process identifies variables that are maintaining the target behavior. The process provides a functional definition of the specific target behavior. An intervention is then derived from the outcomes of the analysis.

The information for this process is gathered in three ways: interview, direct observation, and systematic manipulations (Morris & Kratochwill, 1998). The interview can be conducted formally or informally, with the parents and teachers of the client, using the Functional Assessment Interview. This interview focuses on several aspects of the target behavior: operationalized definition of the target behavior, its frequency, intensity, duration, antecedent, consequence, when the behavior began, what increases and decreases the occurrence of the target behavior, when it is likely and not likely to occur. Based on the interview, the psychologist is often able to determine the function of the target behavior.

Direct observation is conducted at various times of the day while the child engages in typical activities. Whole interval or partial interval recording techniques can be used. The goal of this method is to determine the frequency and percentage of time the child engages in the target behavior. Another goal is to identify a relationship between the target behavior and the variables maintaining the target behavior, such as people present or setting events. An observational instrument for the functional assessment is the Functional

Assessment Observation Form, which requires in-depth recording of antecedent events and consequences (Morris & Kratochwill, 1989).

<u>Diagnosis and Intervention</u>

<u>Adaptive Behavior Scales.</u> Adaptive behavior scales are typically used to assess the child's adaptive skills and to define strengths and weakness in specified areas for program planning (Mash & Terdal, 1998). The most commonly used scales of adaptive behavior are the Vineland Adaptive Behavior Scales (VABS) and the Scales of Independent Behavior-Revised (SIB-R)(Mash & Terdal, 1998).

The VABS is a comprehensive measurement of adaptive behavior that comes in three forms: The Interview Edition, The Expanded Form, and the Classroom Edition (Sparrow, Balla, & Cicchetti, 1984). It is designed to assess the functional independence and adaptive functioning at home, school, employment setting, and community setting for individuals from newborn to adulthood. The VABS is used for diagnostic purposes, in addition to, program planning. The VABS address four areas of functioning: communication, daily living skills, socialization, and motor skills. Trained professionals complete the VABS in interview form with parents, teachers, or other individuals who know the child being assessed. These individuals answer behavior oriented questions about the child's adaptive skills.

The SIB-R is a comprehensive measurement of adaptive behavior and maladaptive behavior used by parents and teachers (Bruininks, Woodcock, Weatherman, and Hill 1984/1997). It is designed to assess the functional

independence and adaptive functioning at home, school, employment setting, and community setting for individuals from three months to eighty years. The SIB-R is used for diagnostic purposes, in addition to, program planning (Bruininks, Woodcock, Weatherman, and Hill 1984/1997). The SIB-R yields a full scale adaptive behavior score from 24 areas: gross-motor skills, fine motor skills, social interaction, language comprehension, language expression, eating and meal preparation, toileting, dressing, personal self-care, domestic skills, time and punctuality, money and value, work skills, home/community orientation, hurtful to self, unusual or repetitive habits, withdrawal or inattentive behavior, socially offensive behavior, uncooperative behavior, hurtful to others, destructive to property, and disruptive behavior.

Interview. Interviews should be geared to help the psychologist gain information about the child's developmental history, social behavior, speech abnormalities, behavioral excesses, inappropriate emotional behavior, insistence on sameness and other behaviors typically found in children with autism (Schreibman & Charlop, 1989). Two instruments that can be used to complete this portion of the assessment are the Parent Interview for Autism (PIA) and the Autism Diagnostic Interview Revised (ADI-R).

The PIA is a structured interview conducted by a trained professional for gathering information from parents of children under the age of six. Parents are asked to rate the frequency, on a scale of 1-5, of behaviors associated with autism (Stone & Hogan, 1993). The interview consists of 118 items which are organized into eleven areas: social relating, affective responses, motor imitation,

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peer interactions, object play, imaginative play, language understanding, nonverbal communication, motoric behaviors, sensory responses, and the need for sameness. The main purpose of the interview is to elicit relevant information needed to meet the DSM-IV TR criteria for diagnosis.

The ADI-R is a semi-structured interview, conducted by a trained professional, and is used for gathering information from the parents of 4-5 year old children with autism (Lord, Rutter, & LeCouteur, 1994). Parents rate the frequency and severity of behaviors on a scale of 0-2 in three areas: reciprocal social interaction, communication and language, and repetitive stereotyped behaviors. The main purpose of the interview is to elicit relevant information needed to meet the DSM-IV TR criteria for diagnosis.

Observations. Observations are conducted to assess various symptoms of autism including social responsiveness, eye contact, speech, behavioral excesses, and parent-child interaction patterns (Schreibman & Charlop, 1989). Groden, Groden, and Stevensen (1997) suggest some guidelines for conducting an observation of children with autism. First, a description of the behaviors, which includes information about the intensity, duration, and precursors, (signaling behaviors) should be obtained. Second, the observer should look for general antecedents or conditions under which the target behavior occurs (day, time, location). Third, the observer should note the specific antecedents which may reveal the precise reasons for the behaviors occurrence. These antecedents may include cognitions and reactions of others to the behavior. Additionally, the observer should look for setting events. These are conditions that determine

whether or not a behavior will occur. They can be immediate or distant in time.

Next, the observer should pay special attention to the consequences of the

behavior. Last of all, the observer should pay particular attention to the perceived

function of the behavior. When an observation is conducted in this manner, the

information can be compiled to identify antecedent-behavior-consequence

patterns and maintaining variables (Groden, Groden, & Stevensen, 1997). There

are measures available in conducting observations for the assessment of

children with autism such as the Autism Diagnostic Observation Schedule and

the Behavior Observation System.

The Behavior Observation System is a standardized observation

procedure that is conducted during free play (Freeman, Ritvo, & Schroth, 1984).

During the observation the child is rated on 25 items in four categories: solitary

behaviors, relation to objects/toys, relation to examiner, and language. The

child's observation is conducted through a one-way mirror in a room containing

an adult observer and several toys. The child is observed for ten second intervals

and is ranked from zero to three based on the frequency of occurrences of target

behaviors (Freeman, Ritvo, & Schroth, 1984).

The Autism Diagnostic Observation Schedule (ADOS) is a semi-structured

play session that allows the examiner to observe communicative and social

behaviors (Lord, Rutter, Goode, Heemsbergen, Jordan, Mawhood, & Schopler,

1989; Mesibov, Adams, & Klinger, 1997). It is a standardized measure that looks

at the child's turn taking skills, symbolic play, and nonverbal and conversational

skills. It is designed for children six to eighteen years of age with a mental age of

at least three years (Lord, Rutter, Goode, Heemsbergen, Jordan, Mawhood, & Schopler, 1989; Mesibov, Adams, & Klinger, 1997).

Interventions

<u>Psychodynamic</u>

From 1911 until the mid 1960's psychodynamically oriented treatments were used as interventions for individuals with autism (Schriebman & Anderson, 2001). It was originally believed that parents of children with autism were overly intellectual, cold hearted, and had a limited interest in other people (Kanner, 1943). From this perspective, it was determined that the cause of autism was due to parental psychopathology and harmful child rearing practices. Bettelhiem (1967) suggested that in response to rejecting parents, children with autism withdrew from social interaction. During this time treatments involved working with parents, primarily mothers, to help them become less rejecting of their children (Bettelheim, 1967). Rimland (1964) argued against this theory suggesting that the disorder was due to a neurological impairment rather than poor parenting. Within the next five years it was determined that psychoanalytic approaches to the treatment of autism were not effective or appropriate and even harmful at times (Kanner, 1943).

Behavioral clinical researchers determined that some of the problems of children with autism that were the most resistant to psychodynamic therapies were amenable to procedures derived from behaviorism (Lovass, Berberich, Perloff, & Schaeffer, 1966; Lovass, Freitag, Gold, & Kassorla, 1965). In addition, Schopler and Reichler suggested that when treating the disorder in children,

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parents should be involved as a part of the treatment team rather than being the focus of the treatment (1971).

<u>Behavioral</u>

Most research on treatment of children with autism is based in some way on behavioral techniques or contain behavioral components to the program. The behavior therapist corrects problems by either altering the conditions or stimuli associated with the behavior (classical conditioning) or by changing the consequences with rewards and punishment (operant conditioning). Most behavioral programs are also based on the Applied Behavior Analysis model which emphasizes the use of instructional techniques designed to change behavior in a systematic and measurable way.

In behavioral programs, the goal is to discover which skills the child lacks and needs, break them down into small units, and teach the units separately helping the child to put them together and generalize them to other environments (Lovass & Smith, 1997). A second goal of behavior therapy is to shape a large number of adaptive behaviors by reinforcing increasingly closer approximations of the target behavior and increasingly complex discriminations among situations (Lovass & Smith, 1997). Unfortunately, due to their limited ability to learn from typical educational environments, children with autism need to be taught skills they need to learn in all settings (Lovass & Smith, 1997). Individuals with autism do not readily generalize what they are taught, which means they need to be taught in all environments. Significant persons in the child's life should be

included in therapy to help maintain the skills that have been learned and to help generalize the skills to new environments (Lovass & Smith, 1997).

As stated previously, operant conditioning techniques are used in behavior therapy. Some examples of operant training techniques utilized in behavioral treatments include: shaping behavior, which is developing successive approximations to a final goal; techniques used for breaking down behaviors into their simplest components to increase opportunities for success; relating reinforcers to what is being taught to increase their value; utilizing self-rewarding techniques; and implementing self-monitoring techniques (Mesibov, et al., 1997).

The Dougless Developmental Disabilities Center is a program that is based on Applied Behavior Analysis principles and behavioral interventions (Dawson & Osterling, 1997). The program's emphasis is on developmentally sequenced programs for each individual and progresses over a three-year period. The first year involves the child being segregated into a classroom called the "prep classroom". During this first year, the child receives one-to-one discrete trial training largely based on the Lovass model. The treatment is conducted in the home and in small group classrooms. The focus of therapy at this point is to gain the skills needed to function in the integrated classroom. After one to two years, when children are ready to progress to the next step, they move into the integrated classroom. This classroom is used to teach children with autism and typical functioning children. This classroom is based in part on Strain's LEAP Model. The program encourages parental involvement and offers support groups for parents and siblings (Dawson & Osterling, 1997).

LEAP is another existing program for children with autism and their families (Dawson & Osterling, 1997). The LEAP Program has two components: the integrated preschool program and the behavior skills training program for parents. The curriculum emphasizes a blend of typical preschool activities and activities designed specifically for children with autism. The program stresses independent play and social interaction, using peer models, prompting, fading, and reinforcement of target behaviors. It provides fifteen hours per week of training at a 3:6 teacher-child ratio. One-on-one training is provided if necessary. The behavior skills training program teaches parents techniques for managing their child's behavior and how to teach their child new skills (Dawson & Osterling, 1997).

The May Institute developed another program for children with autism (Dawson & Osterling, 1997). This program is also based on the Applied Behavior Analysis approach and behavioral interventions. Children with autism receive fifteen hours per week of in-home training for the first six months. The therapy sessions at this time provide one-to-one instruction by both the therapist and the parents. Instruction emphasizes basic skills and the reduction of problem behaviors. After this treatment has been completed or concurrent with it, the child attends one of the institute's preschool programs. The child either attends the Step 1 classroom or the integrated classroom. Most children with autism attend the Step 1 classroom for about one year where they receive highly structured instruction on basic skills, imitation, and learning to work in groups. They

eventually progress to the integrated classroom where the focus is on teaching

skills needed in a general kindergarten classroom (Dawson & Osterling, 1997).

Another program is implemented at the Princeton Child Development

Institute (Dawson & Osterling, 1997). This program is also based on the Applied

Behavior Analysis model and utilizes behavioral interventions. Children with

autism typically begin by participating in a program which focuses on basic skills,

visual and motor imitation, toileting, and matching skills. The children's goals are

periodically assessed for appropriateness and are revised as needed. The

children attend for approximately 27.5 hours per week and receive instruction

with a 1:5 teacher-child ratio. Parental meetings occur at the institute and in the

child's home in order to involve parents in the therapy and to update parents on

their child's progress (Dawson & Osterling, 1997).

The TEACCH program is a popular program in the treatment of children

with autism (Dawson & Osterling, 1997). The program was developed by Eric

Schopler in 1974 and is based on structured teaching and the use of behavioral

techniques in the instruction of children with autism. The number of hours of

instruction as well as the place of instruction is based on the individual needs of

each child. The major priorities of this program include centering on the

individual, understanding the disorder, and providing appropriate adaptations. It

is a broad-based intervention strategy that builds on the existing skills and

interests of the child. The TEACCH program organizes the physical environment

to help the child learn. It also emphasizes making clear and explicit expectations,

using visual cues in instructional sessions, and allowing children with autism to

use the new skills independent of direct adult instruction. The program is structured to cultivate strengths and interests rather than drilling solely on deficits. The program bases the instruction on areas of interest to the child in order to increase motivation and generalization (Dawson & Osterling, 1997).

All of the above interventions were based partly on or use behavioral techniques in their programs; however, none of the programs were strict behavioral programs. There is one such program called the Young Autism Program, also referred to as the Lovaas Method (Dawson & Osterling, 1997, Gresham et al., 1997).

The Lovaas method was started in 1970. There have been several research projects conducted, mostly by Ivar Lovaas himself, on the program, its methods, and its effectiveness with children with autism. This program uses one-to-one instruction throughout the program. It emphasizes the idea that it is important when working with children with autism that the environment be arranged so that positive behaviors are rewarded while negative behaviors are minimized. The elements of the program that are considered necessary for effectiveness include prompting, reinforcement, shaping, and discrimination training. Three characteristics of intensive behavioral treatment are: at least two years of therapy including 30-40 hours per week of one-to-one behavioral intervention; one-to-one teaching by trained therapists of specific cognitive, language, social, and self-help skills; and the use of reinforcers. Proponents of this program believe children receive maximum results when they begin therapy before the age of four, therapy lasts for two to three years, and involves 30-40

hours per week of intense training through discrete trials using behavioral techniques in the home. In the first year of treatment, instructional emphasis is on reducing self-stimulation behaviors, reducing aggressive behaviors, building compliance, teaching imitation, and promoting appropriate toy play. The second year emphasizes expression, abstract language, and interactive play with peers. The third year emphasizes appropriate expression of emotions, pre-academic tasks, and observational learning. Some children with autism continue the home-based intensive behavioral treatment after the child begins attending school. They perform the therapy after school, with less hours per week and less intensity. Lovaas' (1993) research suggests that the key factor to improvement in the child's functioning is the intense therapy for 30-40 hours per week for two to three years. After this time period, the therapy should be continued but success is not as contingent on the intense structure previously needed (Dawson & Osterling, 1997).

All of the above interventions were based partly on or use behavioral techniques in their programs. As can be seen from the description of each program; they are extremely labor intensive and require a significant amount of time. The research in this area suggests that trained service providers must implement direct service interventions in order to have effective outcomes; however, the above mentioned direct service interventions require a significant amount of time and energy. Although most of the research on interventions for children with autism is based in some way on behavioral techniques and most interventions for children with autism are based on behavioral components; it has

been suggested that a consultation model may be effective (Schreibman & Anderson, 2001).

<div align="center">Consultation</div>

<u>History of Consultation Models</u>

    <u>Medical model for consultation.</u> The earliest roots of consultation are found in medicine, with reports being found as early as the thirteenth century in response to the fields of increasing specialization (Gallessich, 1982). In the clinical consultation model, the consultant (specialist in the area) examined the patient and then provided diagnostic or prescriptive treatment to the consultee (the attending physician) who was then left to carry out the treatment with the client (patient)(Meyers, Parsons, & Martin, 1979). Though also practiced by psychologists in mental health and educational settings, the clinical model declined in acceptance and practice for three reasons: (1) its emphasis on diagnosis provided little connection to treatment; (2) its emphasis on abnormality; and (3) the expert role of the consultant was contradictory to the collegial relationship appreciated by many professionals in the mental health field (Brown, Pryzwansky, & Schulte, 1998).

    <u>Caplan's mental health consultation model.</u> The current mental health consultation model for children was first published by Gerald Caplan in 1970 following World War II in response to the numbers of Jewish refugee children in need of mental health assistance (Brown, Pryzwansky, & Schulte, 1998). Caplan's model is defined as a voluntary nonhierarchical relationship between two professionals who are often of different occupational groups and is initiated

by the consultee for the purpose of solving a work related problem (Caplan, 1970). Caplan's model differs from the previous model on three aspects: (1) there is an egalitarian relationship between the consultant and the consultee; (2) the concept of theme interference which has as its basis mild confrontation of stereotypical ideas held by the consultee; and (3) a taxonomy of four approaches (Brown, Pryzwansky, & Schulte, 1998). Assumptions of Caplan's model include (1) both intra-psychic and environmental factors which are important in explaining and changing behavior; (2) more than technical expertise is important in designing effective interventions (3) learning and generalization occur when consultees retain responsibility for actions; (4) mental health consultation is a supplement to other problem solving mechanisms within an organization; and (5) consultee attitudes and affect are important in consultation (Brown, Pryzwansky, & Schulte, 1998). Additional facets of Caplan's mental health model that are important in its differentiation from other models and which have been questioned include the following: the external locus of the consultant, the idea that the consultee has sole responsibility for implementing the interventions, the idea that consultation can only take place when the consultant and consultee are both professionals, and the focus of consultation as a work related problem.

Behavioral consultation model. The popularization of behaviorism, with its basic tenet of behavior being a function of environmental antecedents and consequences, added a new perspective to consultation considerations and those involved when behavior change was the goal (Brown, Pryzwansky, & Schulte, 1998). Bergan (1977) provided the first most fully developed

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consultation model which was later refined by Bergan and Kratochwill (1990). In

their work Bergan and Kratochwill (1990) defined consultation as an indirect,

problem solving service involving a collegial relationship between the consultant

and the consultee in which the consultant acquires and communicates

psychological data germane to the consultee's problem as well as the

psychological principles that will enable the consultee to utilize the data. Bergan

and Kratochwill (1990) discussed three goals of consultation (1) to change the

client's behavior; (2) to alter the consultee's behavior; (3) to produce changes in

organizations that will improve communication and problem solving within the

organization. The consultant's role in this relationship is to provide psychological

information and principles to the consultee (Brown, Pryzwansky, & Schulte,

1998). Communication from the consultant is focused on obtaining a description

of the background, setting information, the parameters of the behavior, special

characteristics of the client, observations, plans that have been previously

attempted, and any additional data pertaining to the behavioral concern of the

consultee. In order to effectively do this, the consultant structures the

communication by asking questions framed to elicit necessary information. Thus,

the relationship between the consultant and the consultee can be characterized

by equal respect, but the format of communication is determined by the

consultant. The role of the consultee is to describe the problem in specific terms,

decide upon a plan to deal with the concerns, implement the plan, and to

supervise the client's behavior (Brown, Pryzwansky, & Schulte, 1998). The

behavioral consultation model of Bergan and Kratochwill (1990) incorporates four

steps: problem identification, problem analysis, plan implementation, and problem evaluation. Five verbal processes, structured by the consultant, are incorporated within each step: specification, evaluation, inference, summarization, and validation.

In 1990, Gutkin and Conoley suggested that in order to bring about meaningful change in the lives of children, the adults who control children's environments are integral to the intervention success. For a school-aged child, those influential adults include the parents and teachers. In making a case for the use of consultation services for children, Gutkin and Conoley go on to say, "By providing treatment to children through primary caregivers such as parents and teachers, indirect services provide psychologists with a vehicle for influencing and modifying both the significant adults in children's lives and the children themselves" (p. 209). Sheridan, Kratochwill, and Bergan (1996) have provided a rationale in promoting consultation services for children which include: (1) consultation directly addresses environmental variables related to the problems and the adults involved in the problem; (2)indirect assessment practice that is commonly observed within settings other than homes (or the setting in which the maladaptive behavior is occurring) may be ineffective and inefficient;(3) consultation involving the teaching of skills to those who work with the child on a regular basis may have a broader impact on children's behavior; and (4) teachers and parents can generalize the consultation procedure to other children within the classroom or family, respectively.

Behavioral consultation has been described by Sheridan, Kratochwill, and Bergan (1996) to bestow several unique benefits. First, when consultation services are provided to a consultee, a larger number of individuals can potentially receive services as a result of the consultee's empowerment to utilize learned techniques to solve and/or prevent future problems. Second, behavioral consultation is a decision-making, goal-oriented service delivery model that is "based on empirical, data-based research that can be translated into practice" (p. 4). Finally, behavioral consultation implies a collegial relationship between the consultant and the consultee.

Conjoint Behavioral Consultation. Conjoint Behavioral consultation (CBC) (Sheridan & Kratochwill, 1992) was developed as a consultation model with a basis in behavioral consultation (Bergan, 1977). The CBC model goes beyond the traditional behavioral consultation model as concerns have been expressed that such a model does not account for all of the elements in the child's environment. Sheridan, Kratochwill, and Bergan (1996) implied that such practices are limiting by not accounting adequately for the ecological influences of the interrelated systems within which the child operates and by which the child is impacted.

The inclusion of both parents and school personnel in the decision making for the welfare of a student has been an important aspect of special education. The latest revisions of the Individuals with Disabilities Education Act (IDEA) mandates this type of process through the enhancement of parental involvement

in the identification, evaluation, and/or placement decisions affecting the child (Individuals with Disabilities Education Act, 1997).

Sheridan and Kratochwill (1992) define Conjoint Behavioral Consultation (CBC) as:

> a systematic, indirect form of service delivery, in which parents and teachers are joined to work together to address the academic, social, or behavioral needs of an individual for whom both parties bear some responsibility. It is designed to engage parents and teachers in a collaborative problem-solving process with the assistance of a consultant, wherein the interconnections between home and school systems are considered crucially important. (p. 122).

Sheridan and Kratochwill (1992) discuss three advantages of consultation from the CBC perspective: (1) it provides consultation with a focus on the interacting systems of a child's life by providing services to parents and teachers together; (2) by adhering to a structured problem-solving framework simultaneously involving both parents and teachers, data can be collected and interventions implemented more consistently and systematically across settings; (3) programming across settings increases generalization and maintenance of treatment effects; (4) the potential for effective communication between home and school increases when using this model.

Sheridan, Kratochwill, and Bergan (1996) discuss six goals of CBC: (1) consultants and consultees will recognize the need to address behavioral concerns across settings; (2) consultees will share responsibility in the outcomes

of the consultation process; (3) improved communication and interaction between school and home; (4) a comprehensive and functional understanding of behavioral problems (5) consistency among settings is important so as to maximize generalization and maintenance of treatment effects; (6) improved functioning among the consultees and client.

There are four stages of Sheridan and Kratochwill's (1992) CBC model that are conducted with parents, teachers, and, in some cases, other significant individuals in the child's life. The four stages include: Stage 1: Problem Identification, Stage 2: Problem Analysis, Stage 3: Treatment Implementation, and Stage 4: Treatment Evaluation.

Stage 1: The Problem Identification phase of the CBC model consists of the consultant working collaboratively with the consultee in precisely identifying and operationally defining the most salient problem to be targeted. The target behaviors are identified based on the situational conditions that surround their occurrences across settings. Thus, it is necessary to identify the antecedent and consequent conditions of the target behavior, as well as, the strength of the behavior. When collecting data during this phase, it is necessary to gather information from multiple sources across multiple settings (e.g., home and school) using multiple methods (e.g., rating scales, self-report measures, and direct observations). This will provide a comprehensive conceptualization of the target behavior. During this phase, there should also be an agreement on a goal for behavior change across settings.

Stage 2: The Problem Analysis phase of the CBC model consists of designing a plan to achieve problem solution of the target behavior based on the information from the Problem Identification phase. This plan should be designed to achieve problem solution of the target behavior across settings. This stage begins with an evaluation and agreement on the sufficiency and adequacy of the baseline data across settings. At this time, there should be an understanding of the antecedent and consequent conditions of the target behavior. Setting events, ecological conditions, and cross-setting variables that may impact the target behavior should also be identified during this phase. The consultant's role during this phase is to assist the consultees in identifying variables across settings that might influence the attainment of solving the problem and to help develop an intervention plan that will be consistent across settings. The consultee's role during this phase are to clarify information and assist in the generation and selection of intervention plans. During this phase, treatment acceptability (perceptions of the consultees regarding the intervention procedure) may also be assessed.

Stage 3: Treatment Plan Implementation of the CBC model involves the implementation of the intervention plan agreed upon in the problem analysis phase. During this phase the possibility of behavioral side effects (effects of the intervention that are not desired) and contrast effects (effects in non-treatment conditions that run counter to those under treatment conditions) should be discussed. Modifications in the intervention plan should be made immediately if these effects are observed. It is critical to continue to collect data during this

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phase as it is necessary to compare baseline data to intervention data. During this phase, treatment integrity (the degree to which intervention plans are implemented as designed), may also be assessed.

Stage 4: The Treatment Plan Evaluation phase of the CBC model consists of determining the attainment of the consultation goals in regards to the target behavior, as well as, the efficacy of the treatment across settings. These data will allow the consultant and consultee to determine further action. At this point it may be decided that the intervention plan is to be continued, modified, or withdrawn. It is often necessary to modify intervention plans in order to achieve goal attainment.

Research has demonstrated the effectiveness of CBC in addressing a variety of problem behaviors presented by children, as well as when comparing it to other singular consultation methods. The CBC model has been demonstrated to be effective when addressing academic concerns related to completion of assignments, in addition to, accuracy of the completed work (Galloway & Sheridan, 1994), eliminating irrational fears in children (Sheridan & Colton, 1994), and increasing cooperative play behavior among children (Colton, Sheridan, Jenson, & Malm, 1995).

In a national survey, Sheridan and Steck (1995) investigated the acceptability of CBC by nationally certified school psychologists who served as consultants during the process. Their findings indicated that CBC was rated more acceptable than any other mode of service delivery across academic, behavioral, and social-emotional problems. Furthermore, ratings of CBC acceptability were

most affected by external time constraints and perceived administrative/organizational support for implementing the procedure.

Sheridan, Eagle, Cowan, and Mickelson (2001) conducted a study investigating the efficacy, acceptability, and satisfaction of the CBC model among consultants and consultees. The study included 52 identified clients with disabilities or at risk for academic failure, 53 parents and 56 teachers as consultees, and 30 graduate student consultants. Subjective ratings by consultees of the efficacy, acceptability, and satisfaction associated with the CBC process were positive. Moderate to large effect sizes were found across home and school settings with regard to target behavior improvement. Study limitations cited by the authors included the dependence on self-report outcome and treatment integrity data provided by parents and teachers.

<u>Evaluation of Consultation</u>

Gutkin (1993) addressed research methodologies for consultation services to children with suggestions for future research. He suggested greater specifications of the processes involved in the consultation rather than simply stating that consultation was implemented. The treatment integrity of the consultation process, as well as treatment intervention, is also necessary when discussing the results, interpretations, and conclusions. Gutkin further suggested the need for greater inclusion of behavioral observation data as opposed to self-report and attitudinal type data. He also suggested addressing greater numbers of variables using multiple methods in keeping with the increasing ecological perspective of consultation. In addition, Gutkin identified several methodologies

considered to be "promising" when addressing future research goals. The use of small-n methodologies was proposed by Gutkin as a reasonable response to his previously discussed methodological flaws. He defines small-n studies as ranging from one to three cases. A small number of consultation cases will allow the researcher to define in greater detail the specific consultation process; to collect data pertaining to the integrity of the consultation process, as well as, the integrity of the implementation of the intervention; to gather observational data for the consultants, consultee's, and clients; to conduct follow-up after completion of consultation; and to determine if the consultation process used in the research is representative of what is used by practitioners. In response to the criticism that small-n designs are not robust enough for adequate external validity, Gutkin suggests large numbers of replications of small-n studies. The standardization of the consultation process and the desirability for more case study methodologies are also discussed with implications for future research.

Children with autism have difficulty generalizing newly acquired skills across settings (Mash & Barkley, 1996). A model such as CBC may be beneficial in promoting the generalization of newly acquired skills across settings (school and home) as the model promotes developing interventions across settings.

Generalization

Stokes and Baer (1977) define generalization as:

the occurrence of relevant behaviors under different, non-training

conditions (i.e., across subjects, settings, people, behaviors, and/or time)

same events in those without the scheduling of the same events in those

conditions as had been scheduled in the training condition (p. 350).

Historically, generalization was considered to be a passive phenomenon

(Skinner, 1953). This means that generalization was something that happened

and was not something that was produced by specific procedures or

programmed. Currently, it is widely accepted that there is a need for

generalization of therapeutic behavior change; however, it is not always realized

that generalization does not automatically occur. Therefore, there is a need to

actively program for generalization which requires effective techniques (Baer,

Wolf & Risely, 1968). Techniques designed to program for generalization are

categorized into nine categories: (1) train and hope, (2) sequential modification,

(3) introduction of natural maintaining contingencies, (4) train sufficient

exemplars, (5) train contingencies, loosely, (6) use indiscriminable contingencies,

(7) program common stimuli, (8) mediate generalization, (9) train to generalize

(Stokes & Baer, 1977; Stokes & Osnes, 1986).

Train and hope is the most frequently used method to program for

generalization. In this type of generalization, a behavior change occurs through

manipulation. The behavior change is then documented but not programmed into

the intervention.

Sequential modification involves a more systematic approach to

generalization. In this approach, a behavior change occurs, which is then

documented, and generalization is assessed. If generalization is deficient,

systematic sequential modification procedures are implemented in every

nongeneralized setting in order to achieve the desired outcome.

Introduction of natural maintaining contingencies is the most dependable

of all the generalization programming techniques. In this type of generalization,

the researcher chooses behaviors to teach the child that are normally maintained

by reinforcement in the natural setting. The natural reinforcement in the

environment is predetermined so that it is assured that the child will access the

behavioral "traps" during program implementation. However, there may not be

any natural reinforcement operating to develop or maintain the child's skills. In

this case, the environment is restructured in order to extend the generalization of

skills to new settings. Stokes and Baer (1977) indicate that this technique is

generally not considered to be generalization but, rather, transfer of control from

one reinforcement contingency to another.

Training sufficient exemplars may be the most valuable area of

programming. This technique involves providing multiple stimulus conditions or

responses to the treatment program in order to enhance generalization. Ensuring

that a wide-range of exemplars are available, a number of stimulus and/or

response exemplars should be incorporated into the training to maximize

generalization.

Training loosely is a relatively simple technique which involves having little

control over the stimuli presented and the number of correct responses. Using

this method will maximize the generalization of behaviors to alternate settings.

The use of indiscriminable contingencies can be achieved through intermittent schedules of reinforcement. The use of intermittent schedules of reinforcement increases resistance to extinction, which maintains the desired response rate of the behavior. There are two types of schedules for intermittent reinforcement: ratio schedule and interval schedule. In ratio schedules, the reinforcement is contingent based upon the demonstration of a certain number of responses (Kazdin, 1982). In interval schedules, the reinforcement is contingent based upon the amount of time that passes between reinforcements (Kazdin, 1982). More generalization tends to occur when the individual cannot discriminate under which conditions or settings a response will be or will not be reinforced.

Programming common stimuli enhances generalization by introducing sufficient stimuli that occur in common in both the training and generalization settings. The researcher must guarantee that a common stimulus is present in both the training situations and the new generalization settings. The stimulus chosen for this role is one that has already established its function for other important behaviors of the child.

Mediating generalization involves teaching a new response that is likely to be utilized when solving problems in settings outside of the training situation. The problems encountered in the new setting should be similar to problems presented in the training situation in order to maximize generalization. The most commonly used mediator in solving problems is language.

Training to generalize involves placing a reinforcement contingency on generalization itself. This can be accomplished by the systematic use of instructions to facilitate generalization. The individual is told about the possibilities of generalization and then asked to demonstrate the generalized behavior.

Generalization can be assessed from two perspectives: behavioral topography and behavioral function (Stokes, 1992). Behavioral topography is a description of relevant goals specifying relevant outcomes. This means that the term generalization may be used if there are widespread effects following a focused intervention. Generalization is successful if there is behavior change across settings, people, behaviors, and time. This type of generalization can occur using the three programming principles of exploiting current functional contingencies, training diversely, and incorporating functional mediators (Stokes & Osnes, 1986; 1989)

Generalization from a behavioral function perspective is experimentally related to the contingencies by which relevant goals are obtained efficiently (Stokes, 1992). Functional generalization can occur in two ways: stimulus generalization and response generalization. Stimulus generalization occurs when the same behavior occurs in response to variations of the original stimulus. Response generalization refers to the occurrence of multiple behaviors to the same stimulus. Functional generalization relies on the reliability and efficiency of the training program (Homer & Billingsly, 1988). If a newly trained skill is not

more reliable or efficient in receiving reinforcement, the new skill will not generalize across situations or be maintained over time.

<div align="center">Single Case Design</div>

<u>History</u>

Much of the traditional research in psychology was based on the extensive investigation of single individuals (Kazdin, 1982). In the late 1880's and early 1900's most of the research in psychology utilized only one or a few subjects. Several prominent psychologists in the history of psychology used the single case design method for conducting research (Kazdin, 1982).

Wundt investigated sensory and perceptual processes in individuals. He believed that the in-depth investigation of only a few subjects was the way to understand sensation and perception. Ebbinghaus also used a single case design method in his work with human memory. He studied learning and recall of nonsense syllables while altering conditions of training. Pavlov used single case design in his animal research. In his research, Pavlov identified independent and dependent variables. Thorndike also used a single case design with his investigation of cats escaping from puzzle boxes.

<u>General Requirements</u>

There are several general requirements of single case design studies: continuous assessment, baseline assessment, stability of performance, variability in the data, and trend in data (Kazdin, 1982). The most fundamental design requirement of single case experimentation is continuous assessment of performance over time. This is accomplished through observation before the

intervention and during the intervention. Continuous assessment is a basic requirement of single case design because it allows the investigator to examine the pattern and stability of performance before and during treatment. Single case design experimentation begins with several observations of the target behavior which is also known as the baseline phase. The baseline phase provides information about the target behavior before the intervention begins. The information provided in this phase describes the existing level of performance of the individual, identifies the extent of the problem behavior, and predicts the level of performance for the immediate future. There must be a minimum of at least two baseline observations in each setting; however, more baseline data clarifies the effects of the intervention. Because baseline performance is used to predict future behavior, it is important that the data are stable and that a trend is established. This means that there should be relatively little variability in the individual's performance during the baseline phase. If there is variability in the data during the baseline phase, it will interfere with the ability to draw conclusions about the treatment. Trend in data is another general requirement of single case design. Trend in data refers to the tendency for the performance of a behavior to consistently increase or decrease over time.

Threats to Validity

Threats to internal validity. It is important to discuss threats to internal validity as they must be ruled out in order to make inferences concerning the effectiveness of an intervention. Threats to internal validity include: history, maturation, testing, instrumentation, statistical regression, selection biases,

attrition, and diffusion of treatment (Cook & Campbell, 1979; Kazdin, 1982).

History occurs when an event occurring at the time of the experiment influences the results of the experiment. This threat is diminished by the design of the study as baseline data is collected in all settings until the intervention is implemented. This rules out the possibility that the pattern of results could be attributed to history rather than the effects of the intervention. Maturation occurs when there is a change over time within the subjects of the experiment. This threat is guarded against by the design of the study and by ruling out the possibility that the pattern of results could be attributed to this threat to validity. Testing occurs when there is a change in the subject's performance that is due to repeated assessment. This may occur in designs where there is a pre and post assessment. This threat is often controlled for by having a no treatment control group, in addition to, the treatment group. This allows the researcher to evaluate the effects of the intervention over and above the influence of repeated testing. Instrumentation occurs when the instrument that is used to detect changes in the clients performance changes over time. This threat is guarded against by ensuring that the measuring device or the criteria used to score a behavior remains consistent. Statistical regression occurs when a client's scores are extreme on one assessment and then regress toward the mean on another. This threat is guarded against by including a no treatment group and by randomly assigning subjects to groups. By doing this, differential regression between groups can be ruled out and the effects of the intervention can be separated from the effects of regression toward the mean. Selection biases occur when differences in groups

are attributed due to differential selection or assignment of individuals to each group. Selection biases are typically not a threat to internal validity in single case designs. This is because inferences about the outcomes of the intervention do not depend on comparisons of different participants. Attrition occurs when there is an overall change in scores between groups due to loss of participants over the course of the study. Attrition is typically not a threat to internal validity in single case designs as there are no group scores. Diffusion of treatment occurs when the intervention is inadvertently provided to participants in the control group that should not yet be receiving the intervention. Diffusion of treatment is guarded against by ensuring that the different conditions remain distinct.

  Threats to external validity. It is also important to discuss threats to external validity as they must be ruled out in order to make inferences concerning the effectiveness of an intervention. Threats to external validity include: generality across subjects, generality across settings, generality across response measures, generality across times, generality across behavior change agents, reactive experimental arrangements, reactive assessment, pre-test sensitization, and multiple treatment interference (Cook & Campbell, 1979; Kazdin, 1982). Generality across subjects occurs when the results of the study can be extended to individuals whose characteristics are different from those in the study. Often, findings of a study may be internally valid; however, these results may only be generalizable to individuals who are very similar to the participants in the study. Unique features of a population must be considered when assessing the generalizability of the findings of a study. Generality across settings occurs when

the results of the study can be extended to situations other than those included in the study. Generality across response measures occurs when the results of the study can be extended to other behaviors that were not included in the study. Generality across times occurs when the results of the study can be extended beyond the time of day the intervention is in effect. When addressing generality across settings, response measures, and times, it is important to provide qualifiers and restrictions concerning the findings. Generality across behavior change agents occurs when the effects of the intervention can be extended to other individuals who can administer the intervention. Reactive experimental arrangement occurs when the participants of the study are aware that they are participating in an experiment and, in response, behave differently. Reactive assessment occurs when the participants are aware that their behavior is being assessed which influences how they respond. Pre-test sensitization occurs when assessing participants before the intervention sensitizes them to the intervention that follows. Multiple-treatment interference occurs when subjects are exposed to more than one treatment which restricts the conclusions that can be made about the treatment.

Multiple-Baseline Designs Across Settings

In multiple-baseline designs across settings, baseline data are gathered for a particular behavior of one person across different settings. For this design, there must be at least two settings in which baseline information is collected and interventions are implemented (Kazdin, 1982). The design begins with observations of the behavior in each of the settings until the behavior is stable in

each setting. There must be a minimum of at least two baseline observations in each setting; however, more baseline data clarifies the effects of the intervention (Kazdin, 1982). There must also be a trend in the baseline data. The intervention phase is then implemented in one of the settings while continuing to collect baseline information in the other setting. Performance of the target behavior in the intervention phase should change while performance of the target behavior in the other settings should not show change. When behavior stabilizes in all of the settings, the intervention is extended to another setting. This procedure is continued until performance in all of the settings in which baseline data were collected receive the intervention.

Advantages of the Multiple-Baseline Design

Multiple-baseline designs have a number of advantages that make them both experimentally and clinically useful (Kazdin, 1982). Multiple-baseline designs do not depend on the withdrawal of the intervention to show that behavior change was a function of the intervention. This means that there is no need to reverse or suspend treatment effects for the purpose of the design. Another benefit of this design is that it requires applying the intervention to one setting at a time. If the target behaviors are altered, the intervention is extended to other settings. The gradual implementation of the intervention has several benefits. One benefit is that the intervention can first be implemented on a small scale before it is extended to other settings. Another benefit is that applying the intervention to one setting allows for determining its effectiveness before extending the intervention to other settings. This method also has advantages for

the client as interventions are implemented in one setting at a time and then gradually incorporated into others. As the client improves in one setting, increased demands are placed in another. This method follows a shaping model for the client.

Problems and Limitations of the Multiple-Baseline Design

Ambiguity can arise in drawing inferences about intervention effects using multiple baseline designs (Kazdin, 1982). These ambiguities can arise from the interdependence of the settings that serve as baselines or from inconsistent effects of the intervention on the different baselines. Practical and methodological problems may also arise when intervention is withheld from one or more settings for a long period of time (Kazdin, 1982).

Interdependence of the baselines. A critical requirement for demonstrating effects of the intervention in a multiple baseline design is that each baseline only changes when an intervention is implemented and not before (Kazdin, 1982). Sometimes baselines may be interdependent which means that changes in one of the baselines carries over to changes in another baseline even though the intervention has not been implemented in the second baseline.

Inconsistent effects of the intervention. Another potential problem with multiple-baseline designs is that the intervention may produce inconsistent effects across settings (Kazdin, 1982). This means that when the intervention is introduced, some target behaviors are altered while others are not.

Prolonged baselines. Multiple baseline designs depend on withholding interventions from each baseline setting for a period of time (Kazdin, 1982). If

there are several settings, it is possible that the intervention is withheld for several weeks before the last setting receives the intervention. Several issues arise when treatment is withheld from clients. There are clinical and ethical considerations when withholding treatments. If an intervention is effective in one setting, perhaps it should immediately be extended to other settings. Withholding treatment may be unethical, especially if there is evidence the intervention has positive outcomes. Even though there may be some justification for temporarily withholding treatment for the purpose of evaluation, concerns increase when the period of withholding treatment is prolonged. Methodological problems may arise when the baseline phase is prolonged. One of the criteria of the multiple baseline design is that behaviors change only when the intervention is introduced. If the baseline phase is extended, behaviors may improve before the intervention is implemented.

Data Evaluation

Data in single case designs are evaluated using experimental and therapeutic criteria (Risley, 1970). Experimental criterion refers to whether or not behavior change has occurred and if the behavior change is due to the intervention. Therapeutic criterion refers to whether or not the effects of the intervention have clinical significance.

Experimental Criterion. In single case design studies visual inspection and statistical analyses are used to evaluate whether the experimental criterion has been met (Kazdin, 1982).

When using the visual inspection method, data from the intervention are graphed and a decision concerning the reliability of the intervention effects are made by visually examining the graphed data. There are several criteria that have to be met in order to use the visual inspection method: changes in mean, level, trend, and latency (Kazdin, 1982). There must be changes in the mean or average rate of performance across phases of the intervention. There must also be changes in the level of performance as there must be a shift in performance from one phase to the next. There must also be a trend in the data. This means that there must be a systematic change in the data over time. Lastly, the latency of the change in behavior is important as this indicates the speed of change in performance when the intervention is introduced. The advantage in using visual inspection is that it allows only the strongest interventions to be agreed upon as significant (Kazdin, 1982). One criticism of this data evaluation method is that psychologists may disagree as to what is considered to be a reliable effect. Another criticism of the visual inspection method is that the decision rules for determining whether or not an intervention is effective are not explicit or consistently invoked (Kazdin, 1982).

The use of statistical evaluation in single case designs has been suggested as a way of supplementing the visual inspection method. There are several reasons for using statistical analyses: unstable baselines, investigation of new research areas, and when addressing small changes in performance (Kazdin, 1982). When baselines are unstable, statistical analyses can be used to evaluate intervention effects. When investigating new areas of research,

intervention effects may be weak but significant. Statistical evaluation can be used to detect significance in weak interventions. Lastly, there are situations when it may be important to detect even small changes in performance. Statistical evaluation allows the researcher to be able to detect these small changes. Several statistical techniques can be used in single case designs including t-tests, F-tests, time-series analysis, randomization tests, and the split-middle technique. The statistical application used to evaluate the data depends on the design of the study, the characteristics of the data, and how the intervention is presented.

Therapeutic criterion. The therapeutic criterion for a single case design is evaluated by determining whether or not the effect of the intervention has clinical significance (Kazdin, 1982). When examining the clinical significance of an intervention it is necessary to address social validation which is the social criteria for evaluating intervention outcomes. Two methods of social validation are relevant when evaluating intervention effects: social comparison and subjective evaluation (Kazdin, 1982). Social comparison assesses whether or not the effects of the intervention brought the client's behavior to the level of their peers. Subjective comparison assesses whether or not the overall functioning of the client has improved based on judgments of individuals who have everyday contact with the client.

Purpose of the
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Study, Research Questions, and Hypotheses

The purpose of this study is to investigate the appropriateness of CBC in promoting the success of elementary and secondary school age children with an IDEA eligibility of autism when addressing behavioral concerns. Answers to the following substantive questions are integral to such a purpose, and consideration of the unique characteristics and preferences of children with a diagnosis of autism within the CBC structure results in the hypotheses that follow each question.

1. Does the application of consultation result in an effective intervention for reducing the levels of identified behavioral excesses across elementary and secondary school age children in special education with an IDEA eligibility of autism? The effects of the intervention will be evaluated by the Goal Attainment Scale and visual inspection of the difference between the baseline and intervention phase of the study using a multiple baseline design.

    Hypothesis: It is hypothesized that, for the participants in this study, the consultation process and the resultant treatments will produce effective interventions for elementary and secondary school age children in special education with an IDEA eligibility of autism.

2. Can the application of the Conjoint Behavioral Consultation Model result in an intervention that effectively reduces the levels of identified behavioral excesses across settings (special education classroom, regular education

classroom, and home) for elementary and secondary school age children with an IDEA eligibility of autism? The effects of Conjoint Behavioral Consultation will be evaluated by the Goal Attainment Scale and visual inspection of the differences between the baseline and intervention phases of the study using a multiple baseline across settings design.

Hypothesis: It is hypothesized that, for the participants in this study, the consultation process and the resultant treatments will produce effective interventions for elementary and secondary school age children with an IDEA eligibility of autism.

3. Can generalization across settings be programmed to produce treatment effects for elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism? Generalization will be evaluated through the visual inspection of the difference between the baseline and intervention phases of the study using a multiple baseline across settings design.

Hypothesis: It is hypothesized that, for the participants in this study, generalization across settings will occur for elementary and secondary school age children with an IDEA eligibility of autism.

4. Is Conjoint Behavioral Consultation, between home and school, an acceptable model for the parents and teachers of elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism? The acceptability of the Conjoint Behavioral

Consultation model will be assessed by the descriptive statistics of the Parent/Teacher Consultation Services Questionnaire (PCSQ/TCSQ).

Hypothesis: It is hypothesized that, for the participants in this study, the consultation process will be an acceptable model for the parents and teachers of elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism.

5. Will the parents and teachers of elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism find the intervention acceptable? The acceptability of the intervention will be assessed by the descriptive statistics of the Treatment Evaluation Questionnaire-Parent and Teacher Forms (TEQ-P and TEQ-T) and the Intervention Rating Profile –15 (IRP-15).

Hypothesis: It is hypothesized that, for the participants in this study, the intervention will be acceptable as rated by the parents and teachers of elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism.

6. How will levels of intervention effectiveness relate to consultee integrity? Intervention effectiveness will be measured by consultee ratings on the Goal Attainment Scale (GAS) and visual inspection of the difference between the baseline and intervention phases of the study. Consultee integrity will be measured by the percentage of steps of the intervention completed by the consultee.

Hypothesis: It is hypothesized that there will be a positive relation between

consultee integrity and intervention effectiveness.

7. What is the relation between the consultee's acceptability of the intervention

and consultee integrity when implementing the intervention. Consultee

acceptability will be measured by the Treatment Evaluation Questionnaire-

Parent and Teacher Forms (TEQ-P/T) and the Intervention Rating Profile-15

(IRP-15). Consultee integrity will be measured by the percentage of steps of

the intervention completed by the consultee. Hypothesis: It is hypothesized

that there will be a positive relation between consultee acceptability of the

intervention and consultee integrity when implementing the intervention.

CHAPTER THREE

METHODOLOGY

Research Methodology

<u>Participants</u>

Clients: Six children from an urban school district in the Midwest were recruited to participate in this study. One of the six participants was from an elementary school while the other five participants were from a secondary school. The children included 6 boys ranging in age from 9 to 13 years-old. All participants had an IDEA eligibility of autism, and spent some portion of their day in the regular education and special education classrooms. Behavioral excesses were targeted for each child because they were readily observable. Each participant had similar types and levels of behavioral problems both at home and school. See participant selection phase for a detailed explanation of how participants were selected.

Consultees: The consultees included special education teachers, regular education teachers, and the parents of children with autism. See participant selection phase for a detailed explanation of how participants were selected.

Consultant: The researcher, an advanced School Psychology graduate student from a comprehensive university, served as the consultant in this study. The consultant is a full time student and in good standing with an APA-accredited and NASP-approved School Psychology program. The consultant has completed training in Conjoint Behavioral Consultation using the model developed by Sheridan, Kratochwill, and Bergan (1996). The consultant has also completed three consultation courses within the context of the Ph.D. program: Psychological Consultation, Instructional Consultation and Assessment, and Behavioral Consultation and Assessment. The consultant utilized a notebook containing a schedule of consultation phases and activities, scripts to be used, as well as all of the instruments to be used during the study. Data were collected daily from the consultees.

Setting

The settings in which consultation occurred were the special education classroom, the regular education classroom, and the home.

Design

A single case design with multiple baselines across settings was used to answer the first research question which addresses the effectiveness of consultation for children with autism. This included a baseline phase and an intervention phase for each subject. The effectiveness of consultation was evaluated through visual inspection of the difference between the baseline and intervention phase of the study.

A single case design with multiple baselines across settings was also used to answer the second and third research questions which address the effectiveness of using a Conjoint Behavioral Consultation Model and programming generalization through programming common stimuli across settings. In this design the full intervention was implemented in the first setting or training setting (special education classroom), a partial form (programming common stimuli) of the intervention was implemented in the second setting, (regular education classroom), and the same partial form of the intervention was also implemented in the third setting (home). The effectiveness of the CBC Model and generalization of skills across settings was evaluated through visual inspection of the difference between the baseline and intervention phases of the study.

Instruments

Conjoint Problem Identification Interview (CPII). The CPII (Appendix A) is an interview used in the Conjoint Behavioral Process and was developed by Sheridan, Kratochwill, and Bergan (1996). The goals of the CPII were to establish a working relationship between parents and teachers and between the consultants and consultees. Second, the interview was used to define the target behavior in behavioral terms. In addition, the interview was used to provide a tentative identification of the target behavior in terms of the antecedent, situation, and consequent conditions across settings. The interview was also used to provide a tentative frequency and strength of the behavior across settings. The interview was also used to discuss and reach agreement on a goal for behavior

change across settings. Last, the interview was used to establish a procedure for collecting baseline data across settings in terms of what was recorded, who was to record the data, and how the behavior was to be recorded.

Conjoint Problem Analysis Interview (CPAI). The CPAI (Appendix B) is an analysis of the problem behavior and is used in the Conjoint Behavioral process and was developed by Sheridan, Kratochwill, and Bergan (1996). The goals of the CPAI were to establish agreement on the sufficiency and adequacy of baseline data across settings. Second, the interview was used to conduct a functional analysis of the behavior across settings (i.e., antecedent, consequent, and sequential conditions). Last, this interview was used to identify setting events (events that were functionally related, but temporarily or contextually distal to the target behavior), ecological conditions, and other cross-setting variables that may have impacted the target behavior.

Goal Attainment Scaling (GAS). The GAS has two forms, parent (Appendix C) and teacher (Appendix D) and was completed by the consultees. The GAS was used as a method for quantifying the progress made on a specific target behavior and was used to facilitate monitoring of the treatment program. Reliability studies on the GAS have revealed high interrater reliability scores (Product-moment correlations of r = .87a to r = .99) and lower reliability estimates when scoring on different occasions, which is expected when using an instrument to measure change (Kiresuk, Smith, and Cardillo, 1994). The Goal attainment scales for this study consisted of 5 points, ranging from the worst possible behavior change (-2) to the best possible behavior change (+2). A score

of zero indicated no change in the target behavior. Teachers and parents identified a specific goal during the Problem Identification Interview and Problem Analysis Interview and were asked to complete the GAS on a weekly basis.

Intervention Rating Profile-15 (IRP-15). The IRP-15 (Appendix E) was developed to assess consultee attitudes toward acceptability of the intervention and effectiveness of the intervention (Witt & Martens, 1983). The IRP-15 is a reliable (Cronbach alpha = .98) 15 item, Likert-type scale (1 = "strongly disagree" to 6 = "strongly agree") that assess the acceptability of intervention procedures. Parents and teachers were asked to complete the IRP-15 on two different occasions throughout the study in order to measure their attitudes toward acceptability of the intervention and reported effectiveness of the intervention.

Parent/Teacher Consultation Services Questionnaire (PCSQ and TCSQ). The Parent-Teacher Consultation Services Questionnaire (PCSQ) (Appendix F) and (TCSQ) (Appendix G) were developed to assess parent and teacher levels of satisfaction with the consultation process. Specific questions reflecting attitudes toward behavioral consultation, the consultant, and the treatment were addressed using a 7-point scale (1 = "strongly disagree" to 7 = "strongly agree"). Items for the PCSQ and TCSQ were adapted from the Parent's Consumer Satisfaction Questionnaire (Forehand & McMahom, 1981) and the Consultation Services Questionnaire (Zins, 1984). Unfortunately, there are no psychometric data currently available on the PCSQ and TCSQ. Parents and teachers were asked to complete the PCSQ and TCSQ at the end of the study to measure their satisfaction with the consultation process.

Treatment Evaluation Questionnaire – Parent and Teacher Forms (TEQ –

P, TEQ – T). The Treatment Evaluation Questionnaire – Parent and Teacher

Forms, TEQ – P, (Appendix H) and, TEQ – T, (Appendix I) were completed by

consultees. These rating forms consisted of 24 items, each and the items

reflected acceptability, appropriateness, and effectiveness of an intervention

strategy using a 6-point scale. This scale was adapted from the Treatment

Evaluation Inventory (TEI; Kazdin, 1980). Kazdin developed the original TEI to

assess the reported effectiveness of the treatment by the teacher and the parent.

Items on the original TEI were chosen though factor analysis process and

replicated across separate samples. Three subscales were calculated from the

TEQ, which consisted of a measurement of treatment acceptability,

effectiveness, and amount of time. Kazdin (1980) has shown good evidence of

the TEI's reliability and factor structure. It has been used in hundreds of studies

and reflects accurately consumers' attitudes about treatments. Parents and

teachers were asked to complete the TEQ-P and TEQ-T at the end of the study

to measure reported effectiveness of the intervention.

Procedure

The above measures were completed within the sequence of baseline,

treatment, and evaluation phases of the research (Table 1).

Table 1

Measures schedule.

	Study Phase			
Instrument	Problem Id.	Baseline	Intervention	Evaluation
CPII	X			
CPAI	X			
GAS P/T		X	X	X
IRP – 15		X	X	X
P/T CSQ				X
P/T TEQ				X
Baseline Data Collection Form		X		
Consultant Observations	X	X	X	

Participant selection phase. The consultant obtained a list of all students,

within a local urban school district in the Midwest, with an autism eligibility and in

grades K-8. From this list, only students placed in both general education and

special education settings were eligible for participation in the study as the study

addressed consultation across settings (special education, general education).

The consultant contacted the parents and teachers of potential research

participants. All parents and teachers who were interested in participating in the

study underwent a screening process in order to determine that the potential

client met the criteria for participation. At that time, the researcher provided a

description of the study to the parents in order to make sure that the potential

participant understood that they were participating in a research study. The

researcher also obtained written consent from parents (See Appendix J) and assent (when possible) (See Appendix K) from the child/student with an autism eligibility. Teacher consent forms (See Appendix L) were then distributed to the special education and regular education teachers of those interested in the study.

Problem identification and intervention selection phase. This phase began with the consultant conducting the Conjoint Problem Identification Interview (CPII) with the special education teacher, regular education teacher, and the parents of the client. This interview was used to obtain information concerning the target behavior: operationalized definition of the target behavior, its frequency, intensity, duration, antecedent, consequence, when the behavior began, what increased and decreased the occurrence of the target behavior, and when it was likely and not likely to occur. The consultant then conducted observations in the special education classroom, general education classroom, and the home to ensure that there were similar types of behavioral excess displayed in these settings at similar levels. The data obtained from these observations were used to verify information obtained in the CPII concerning the target behavior. Last, the consultant had a conjoint meeting with the teachers and parents of the client. During this meeting data were reviewed and the Conjoint Problem Analysis Interview (CPAI) was completed in order to clarify target behaviors, treatment goals, and intervention strategies. Interventions were then developed in such a way as to allow for daily monitoring of intervention integrity.

Baseline phase. The Baseline Data Collection Form (Appendix M) was used to collect observational data in the special education classroom, regular education classroom, and home settings. A minimum of three data points for baseline was obtained for each client in each setting. A second observer was present during at least 33% of the observations in order to establish reliability.

Intervention phase. In order to answer Research Question #1, the intervention developed from the CPAI was implemented for each client in the first setting. Once the intervention reached the goal established in the CPAI for the first setting, (special education classroom) and was stable for at least three data points; a partial form of the intervention (programming common stimuli) was then implemented in the second setting (general education classroom). The interventions, as well as, the intervention integrity were monitored daily. The effectiveness of the intervention was evaluated through visual inspection of the difference between the baseline and intervention phase, within the special education setting, of the study. In addition, the Goal Attainment Scaling (GAS) was administered weekly in order to address the consultees's perceptions of the client's attainment of the goal.

In order to answer Research Questions #2 and #3, the treatment phase began in the first setting (special education classroom) for each client. Once the intervention reached the goal established in the CPAI for at least three data points, a partial form of the intervention (programming common stimuli) was implemented in the second setting (regular education classroom). Once the intervention reached the goal established in the CPAI for at least three data

points, the same partial form of the intervention was implemented in the third setting (home). If the partial implementation of the intervention (programming common stimuli) did not reach the goal developed in the CPAI, the partial form of the intervention was strengthened. If that continued to be unsuccessful, the full intervention was implemented. The intervention, as well as, intervention integrity were monitored daily. The effectiveness of the intervention was evaluated through visual inspection of the difference between the baseline and intervention phases of the study when addressing intervention effectiveness, as well as, generalization of a skill across settings (general education and home) through the use of programming common stimuli. In addition, the GAS was administered weekly in order to address the consultee's perceptions of the client's attainment of the goal in each setting.

Evaluation phase. Evaluation of the effectiveness of the intervention across participants was evaluated through visual inspection of the difference between the baseline and intervention (within the special education setting) phase of the study. In addition, the GAS was administered weekly in order to address the consultee's perceptions of the clients attainment of the goal in each setting.

Evaluation of the effectiveness of the CBC model across settings was monitored daily and was evaluated through visual inspection of the difference between the baseline and intervention phases of the study. In addition, the GAS was administered weekly in order to address the consultee's perceptions of the client's attainment of the goal in each setting.

Evaluation of the effectiveness of generalization of skills, through programming common stimuli, across settings was monitored daily and was evaluated through visual inspection of the difference between the baseline, intervention, and generalization phases of the study. In addition, the GAS was administered weekly in order to address the consultees's perceptions of the client's attainment of the goal in each setting.

Acceptability of the CBC model referred to parents' and teachers' perceptions of whether or not the model was acceptable for changing behaviors such as those involved in the study. Acceptability of the model was assessed during the treatment evaluation phase using the Parent/Teacher Consultation Services Questionnaire (PCSQ and TCSQ) and the Intervention Rating Profile-15 (IRP-15). Descriptive statistics were used to report the results of these instruments.

Acceptability of the intervention referred to the parents' and teachers' perceptions of whether the specific intervention strategies implemented to change the client's behavior were acceptable. The acceptability of the intervention was assessed during the treatment evaluation phase of the study using the Treatment Evaluation Questionnaire – Parent and Teacher Forms (TEQ-P and TEQ-T) and the IRP-15. Descriptive statistics were used to report the results of these instruments.

Consultee treatment integrity referred to the degree to which the consultee implemented the intervention the way it was designed to be implemented. When implementing the intervention, consultee integrity was monitored daily through

the percentage of steps of the intervention completed. In order to address how levels of intervention effectiveness relate to consultee integrity, the effectiveness of the intervention was evaluated through visual inspection of the difference between the baseline and intervention phase of the study. This information was used to determine if there was a relationship between intervention effectiveness and consultee integrity.

Acceptability of the intervention refers to the parents' and teachers' perceptions of whether the specific intervention strategies implemented to change the client's behavior were acceptable. The acceptability of the intervention was assessed during the treatment evaluation phase of the study using the TEQ-P and TEQ-T and the IRP-15. Consultee treatment integrity referred to the degree to which the consultee implemented the intervention the way it was designed to be implemented. When implementing the intervention, consultee integrity was monitored daily through the percentage of steps of the intervention completed. This information was used to determine if there was relationship between acceptability of the consultation model and consultee integrity when implementing the intervention.

CHAPTER FOUR

RESULTS

Case Descriptions

For the six cases in this study, behavioral excesses were identified and interventions designed to reduce the overall occurrences of these excesses were developed and implemented in the special education classroom. These interventions consisted of distinct antecedent stimuli and a consequence associated with a target reduction in the behavioral excess identified. Once a reduction of the targeted behavior occurred, a partial form of the special education intervention was implemented in the general education classroom and home settings. Using the technique of programming common stimuli, an antecedent manipulation was implemented to promote generalization of the behavior reduction in these settings.

For all six participants, the implementation of the full intervention resulted in decreases in the target behavior in the special education classroom. The generalization procedure of programming common stimuli resulted in a reduction of the target behavior for all six participants in the general education setting and for four of the six participants in the home setting. More intensive generalization procedures were utilized for the remaining two participants which resulted in a

reduction of behavior in the home setting. Finally, for four of the six subjects,

behavior rates maintained even after the contingency associated with the

intervention initially implemented in the special education setting was removed

leaving only the common stimuli in place.

Table 2 provides a summary of the participants pertaining to each of the

six cases, as well as a brief summary of the target behavior.

Table 2

Summary of case descriptions.

Case	Special Education Consultee	General Education Consultee	Home Consultee	Target Behavior
#1	English Teacher	Literature Teacher	Mother	Talking about Spiderman
#2	English Teacher	Math Teacher	Mother	Talking about videogames
#3	Reading Teacher	World Geography Teacher	Mother	Throwing objects
#4	Math Teacher	Reading Teacher	Mother	Getting out of seat
#5	Reading Teacher	Social Studies Teacher	Mother	Tearing completed tasks into pieces
#6	Math Teacher	English Teacher	Mother	Talking about electronics

Case #1 (A.D.)

Results for A.D. are graphically presented in Figure 1. A.D. was a 13 year-

old male who attended a local middle school and had a DSM diagnosis of

Asperger's Disorder and an IDEA eligibility of autism. A.D. was initially diagnosed

with Asperger's Disorder in October of 1997 when he was 7 years-old. As part of

his initial evaluation, A.D. was administered the Wechsler Intelligence Scale for Children, Third Edition (WISC-III) where he achieved a Full Scale IQ-81, Verbal Scale IQ-74, and Performance Scale IQ-91. A.D. has received two subsequent re-evaluations which have yielded the same diagnosis. He received special education services for English and math while all other classes were within a general education setting. For this case, the special education consultee was the English teacher, the general education consultee was the literature teacher, and the home consultee was the mother. During the CPII with the consultees it was reported that A.D. engaged in repetitive verbalizations. These verbalizations focused mainly on discussions of the comic book and movie character Spiderman. Consultees reported this behavior to occur approximately 10-15 times during a 45-minute class period and homework time at home. There was evidence that the behavior was occurring with similar levels of frequency across settings and all consultees expressed concern in regard to the rate of the target behavior. A.D.'s mother and teachers reported this behavior has been occurring since the beginning of the school year. A.D.'s mother also reported that he chooses a character of interest to focus on each year based on the year's popular movie and this behavior has been occurring since A.D. was approximately 5-years old. The goal for the rate of the target behavior that was collaboratively derived upon by the consultees and consultant within the CPII was 1-2 occurrences.

During the course of the CPII and the CPAI it was decided that the operationalized definition for the target behavior was "talking about Spiderman in

an audible voice". Based on an analysis of antecedent conditions, setting events, consequent conditions, and environmental/sequential conditions, it was hypothesized that the function of the behavior was attention from peers, teachers, or parents.

Baseline. Baseline data were collected in the special education setting for 6 days and the average rate of the target behavior was 8.2 occurrences. Baseline data were collected in the general education setting for 9 days and the average rate of the target behavior was 11.3 occurrences. Baseline data were also collected in the home setting for 12 days and the average rage of the target behavior was 11.3 occurrences.

Intervention. An intervention was developed and implemented within the special education setting which was designed to reduce the number and duration of instances in which A.D. verbalized about Spiderman while in the special education classroom. The intervention consisted of a visual cue (a picture of a spider on his desk), verbal cue from the teacher instructing A.D. not to talk about Spiderman, and a contingency which allowed A.D. five minutes to talk about Spiderman in front of the class at the end of the class period if he did not talk about Spiderman more than one time during the 45-minute session. After the initial baseline phase, the intervention was implemented daily during a specified time period in the special education setting for the duration of the 45-minute class period. After initial implementation, the rate of the target behavior decreased to 2 occurrences for the first session and thereafter decreased to 0 occurrences in the special education setting.

Generalization. Once the effect of the full intervention was established a partial form of the intervention, based on programming common stimuli, and developed for generalization of the target behavior within the general education and home settings was implemented within the multiple baseline design. The partial form of the intervention consisted simply of providing A.D. the visual cue utilized in the full intervention (a picture of a spider on his desk), along with the same verbal cue provided in the special education setting, but delivered by the general education teacher and mother in the general education and home settings respectively. There was no contingency offered in either generalization setting.

Consistent with the multiple baseline design, the partial form of the intervention was implemented first within the general education setting for the duration of the 45-minute class period. Upon implementation, the rate of the target behavior initially decreased to 2 occurrences for the first session, and thereafter decreased to 0 occurrences in the general education setting. After the effect of the partial intervention was established, the same partial form of the intervention was utilized in the home setting during a 45-minute homework period. After implementation of the partial intervention, the rate of the target behavior reduced to 0 verbalizations in the home setting.

Once behavior rates were at or below acceptable levels in all settings it was decided to remove the contingency associated with the intervention in the training setting (special education classroom). Therefore, the partial form of the intervention used for generalization was now being implemented in the training

setting. As a result of this final manipulation, the target behavior remained at low

levels in the special education setting as well as in the generalization settings.
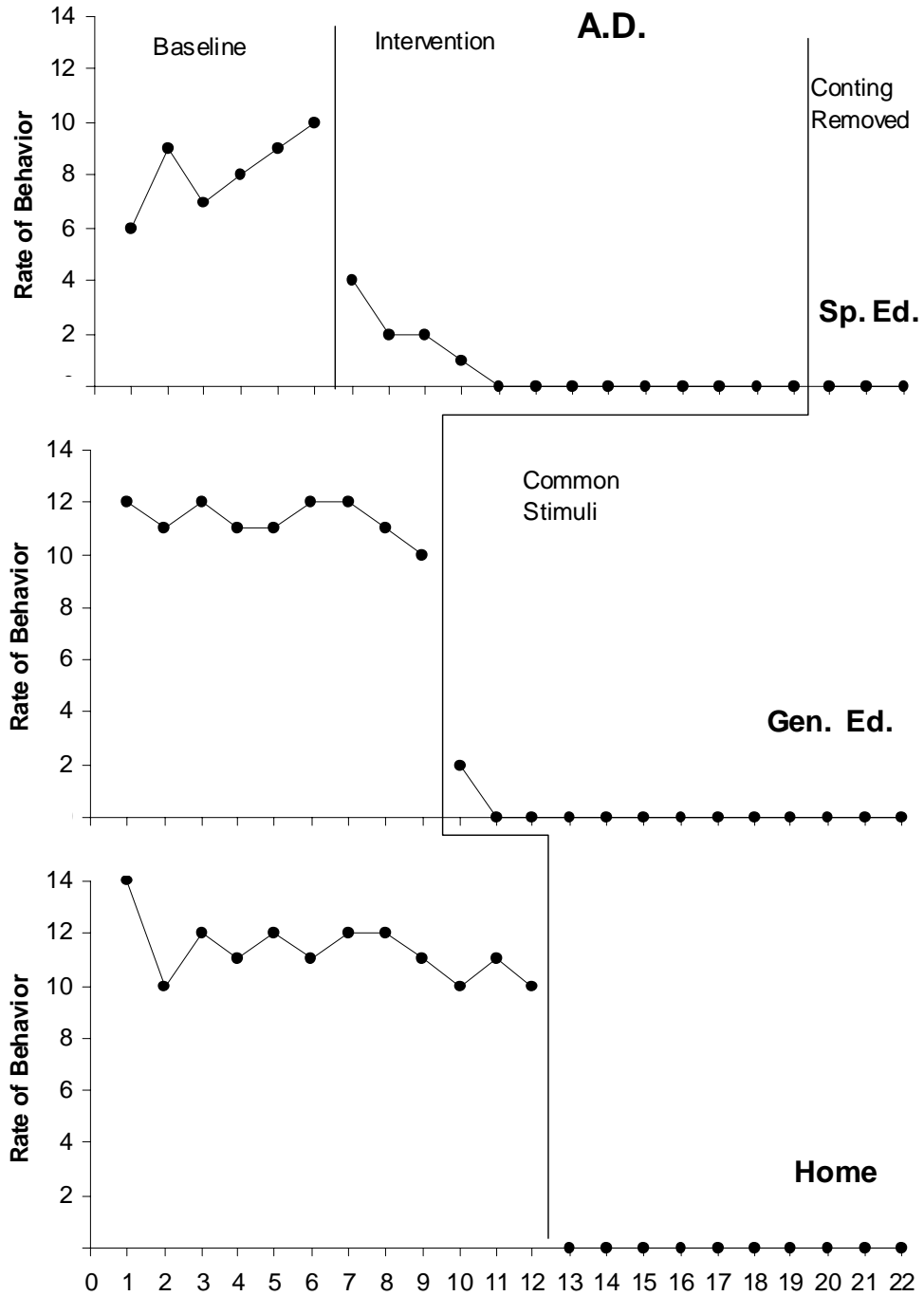
Figure 1. Data observed for A.D. for the target behavior during Baseline (Baseline), Intervention (Intervention), generalization by programming common stimuli (Common Stimuli), and removing the contingency (Conting Removed).

Case #2 (A.S.)

Results for A.S. are graphically presented in Figure 2. A.S. was an 11 year-old male who attended a local middle school and had a DSM diagnosis of Asperger's Disorder and an IDEA eligibility of autism. A.S. was initially diagnosed with Asperger's Disorder in August of 2003 when he was 10 years-old. As part of his initial evaluation, A.S. was administered the Wechsler Intelligence Scale for Children, Third Edition (WISC-III) where he achieved a Full Scale IQ-95, Verbal Scale IQ-88, and Performance Scale IQ-101. He received special education services for English while all other classes were within a general education setting. For this case, the special education consultee was the English teacher, the general education consultee was the math teacher, and the home consultee was the mother. During the CPII with the consultees it was reported that A.S. engaged in repetitive verbalizations. These verbalizations focused mainly on discussions of videogames. Consultees reported this behavior to occur approximately 15-20 times during a 45-minute class period and homework time at home. There was evidence that the behavior was occurring with similar levels of frequency across settings and all consultees expressed concern in regards to the rate of the target behavior. A.S.'s teachers reported the target behavior has been occurring since the beginning of the school year. A.S.'s mother and a file review indicated similar behaviors have been occurring for approximately 5

years. The goal for the rate of the target behavior that was collaboratively derived upon by the consultees and consultant within the CPII was 1-3 occurrences.

During the course of the CPII and the CPAI it was decided that the operationalized definition for the target behavior was "talking about videogames in an audible voice". Based on an analysis of antecedent conditions, setting events, consequent conditions, and environmental/sequential conditions, it was hypothesized that the function of the behavior was attention from peers, teachers, or parents.

Baseline. Baseline data were collected in the special education setting for 6 days and the average rate of the target behavior was 12 occurrences. Baseline data were collected in the general education setting for 9 days and the average rate of the target behavior was 11.1 occurrences. Baseline data were also collected in the home setting for 15 days and the average rage of the target behavior was 13.9 occurrences.

Intervention. An intervention was developed and implemented within the special education setting which was designed to reduce the number and duration of instances in which A.S. verbalized about videogames while in the special education classroom. The intervention consisted of a visual cue (a picture of a computer on his desk), a verbal cue from the teacher instructing A.S. not to talk about videogames, and a contingency which allowed A.S. five minutes to talk about videogames in front of the class at the end of the class period if he did not talk about videogames more than one time during the 45-minute session. After the initial baseline phase, the intervention was implemented daily during a

specified time period in the special education setting for the duration of the 45-minute class period. After initial implementation, the rate of the target behavior decreased to 2 occurrences for the first session, and thereafter decreased to 0-1 occurrences in the special education setting.

Generalization. Once the effect of the full intervention was established, a partial form of the intervention, based on programming common stimuli, developed for generalization of the target behavior within the general education and home settings was implemented within the multiple baseline design. The partial form of the intervention consisted simply of providing A.S. the visual cue utilized in the full intervention (a picture of a computer on his desk), along with the same verbal cue provided in the special education setting, but delivered by the general education teacher and mother in the general education and home settings respectively. There was no contingency offered in either generalization setting.

Consistent with the multiple baseline design, the partial form of the intervention was implemented first within the general education setting for the duration of the 45-minute class period. Upon implementation, the rate of the target behavior decreased to 1 occurrence for the first session of implementation in the general education setting. During this session A.S. reported at the end of class "if I don't get anything for this I am not going to stop". The following day, the behavior increased to 4 occurrences and continued at 4-6 occurrences but did not return to the rate established at baseline. After the effect of the partial intervention was established, the same partial form of the intervention was

utilized in the home setting during a 45-minute homework period. After initial implementation of the partial intervention, the rate of the target behavior reduced to 8-9 occurrences in the home setting.

Because behavior rates were not at or below acceptable levels in all settings, it was decided to implement a random contingency in the general education setting. If A.S. engaged in the target behavior three or less times (the goal established in the CPII) an opportunity for a random contingency was made available. A.S. was told to guess a number 1-6 and was then given a dice to roll. If A.S. rolled the number he guessed, the contingency was available for him to talk about videogames for the last five minutes of class. If not, then he would have to try again the next day. The random contingency was implemented for 3 days in which A.S. never met the pre-determined goal, thus, was not offered an opportunity for the random contingency. Therefore, the full intervention from the special education setting was implemented in the general education and home settings. As a result of this final manipulation, the target behavior remained at low levels in the special education setting and decreased to 0-1 occurrences in the general education setting and 0-2 occurrences in the home setting.
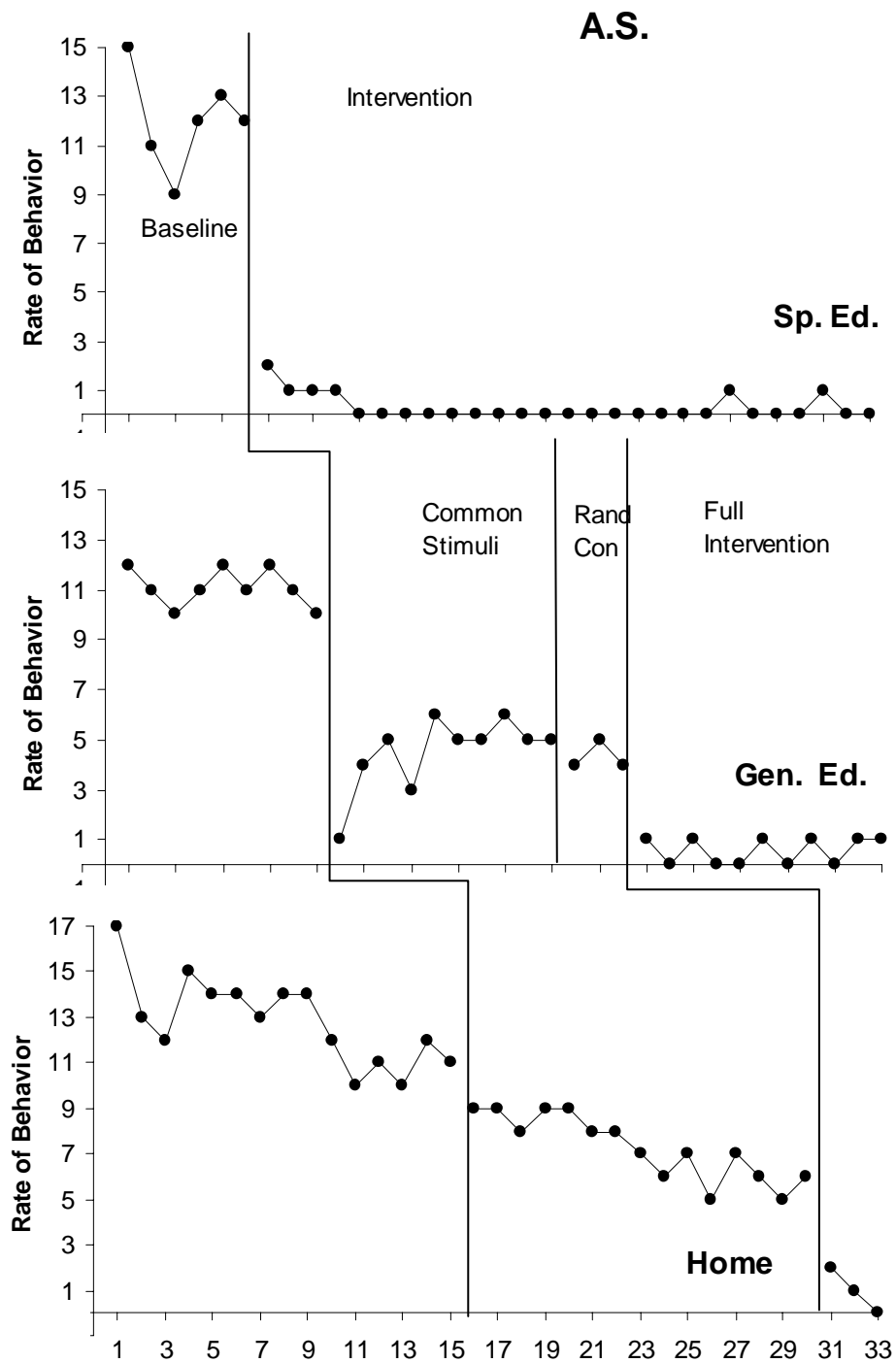
Figure 2. Data observed for A.S. for the target behavior during Baseline

(Baseline), Intervention (Intervention), generalization by programming common

stimuli (Common Stimuli), Random Contingency (Rand Cont), and implementation of the full intervention (Full Intervention).

<u>Case #3 (B.L.)</u>

Results for B.L. are graphically presented in Figure 3. B.L. was 12 year-old male who attended a local middle school and had a DSM diagnosis of Autistic Disorder and an IDEA eligibility of autism. B.L. was initially diagnosed with Pervasive Developmental Delay in December of 1995, when he was 4-years old, and again in January of 1997. B.L. was then diagnosed with Autistic Disorder in November of 2000. As part of his initial evaluation, B.L. was administered the Wide Range Assessment of Memory and Learning where he achieved a Verbal Index score of-72, Visual Memory Index-107, Learning Index-86, and General Memory Index-84. B.L. has received one subsequent re-evaluation which have yielded the same diagnosis. He received special education services for reading and math while all other classes were within a general education setting. For this case, the special education consultee was the reading teacher, the general education consultee was the world geography teacher, and the home consultee was the mother. During the CPII with the consultees it was reported that B.L. engaged in the repetitive behavior of throwing objects. Consultees reported this behavior to occur approximately 7-8 times during a 45-minute class period and 8-9 times during a 45-minute homework time at home. There was evidence that the behavior was occurring with similar levels of frequency across settings and all consultees expressed concern in regard to the rate of the behavior. B.L.'s teacher reported the target behavior has been occurring since the beginning of

the school year. B.L.'s mother and a file review indicated that similar behaviors have been occurring since B.L. was 4-years old in an early education program. The goal for the rate of the target behavior that was collaboratively derived upon by the consultees and consultant within the CPII was 1-2 occurrences.

During the course of the CPII and the CPAI it was decided that the operationalized definition for the target behavior was "throwing objects (paper, pencil, books, binder, or game pieces)". Based on an analysis of antecedent conditions, setting events, consequent conditions, and environmental/sequential conditions, it was hypothesized that the function of the behavior was avoidance of work.

Baseline. Baseline data were collected in the special education setting for 6 days and the average rate of the target behavior was 7.7 occurrences. Baseline data were collected in the general education setting for 9 days and the average rate of the target behavior was 10.1 occurrences. Baseline data were also collected in the home setting for 12 days and the average rage of the target behavior was 10.5 occurrences.

Intervention. An intervention was developed and implemented within the special education setting which was designed to reduce the number of instances in which B.L. threw objects while in the special education classroom. The intervention consisted to a visual cue (a picture of a child sitting and working at their desk), verbal cue from the teacher instructing B.L. not to throw objects, and a contingency which allowed B.L. 5 minutes of free time at the end of the class period if he completed 80% of the task demands without throwing objects during

the 45-minute session. After the initial baseline phase, the intervention was implemented daily during a specified time period in the special education setting for the duration of the 45-minute class period. After initial implementation, the rate of the target behavior decreased to 5 occurrences for the first session and thereafter decreased to 0-3 occurrences in the special education setting.

Generalization. Once the effect of the full intervention was established, a partial form of the intervention, based on programming common stimuli, developed for generalization of the target behavior within the general education and home settings was implemented within the multiple baseline design. The partial form of the intervention consisted simply of providing B.L. the visual cue (a picture of a child sitting at working at their desk), along with the same verbal cue provided in the special education setting, but delivered by the general education teacher and mother in the general education and home settings respectively. There was no contingency offered in either generalization setting.

Consistent with the multiple baseline design, the partial form of the intervention was implemented first within the general education setting for the duration of the 45-minute class period. Upon implementation, the rate of the target behavior initially decreased to 7 occurrences in the general education setting and thereafter decreased to 3-5 occurrences. After the effect of the partial intervention was established, the same partial form of the intervention was utilized in the home setting during a 45-minute homework period. After implementation of the partial intervention, the rate of the target behavior remained stable at 7-8 occurrences in the home setting.

Since the behavior rates were not at or below the acceptable levels in all settings, it was decided to strengthen the intervention by decreasing the amount of time for the contingency to be made available. Thus, the contingency was available two times within the special education setting, each after a 20 minute time period. As a result of this final manipulation, the target behavior decreased to 0 occurrences in the special education setting and decreased to 1-2 occurrences in the training setting generalization settings.
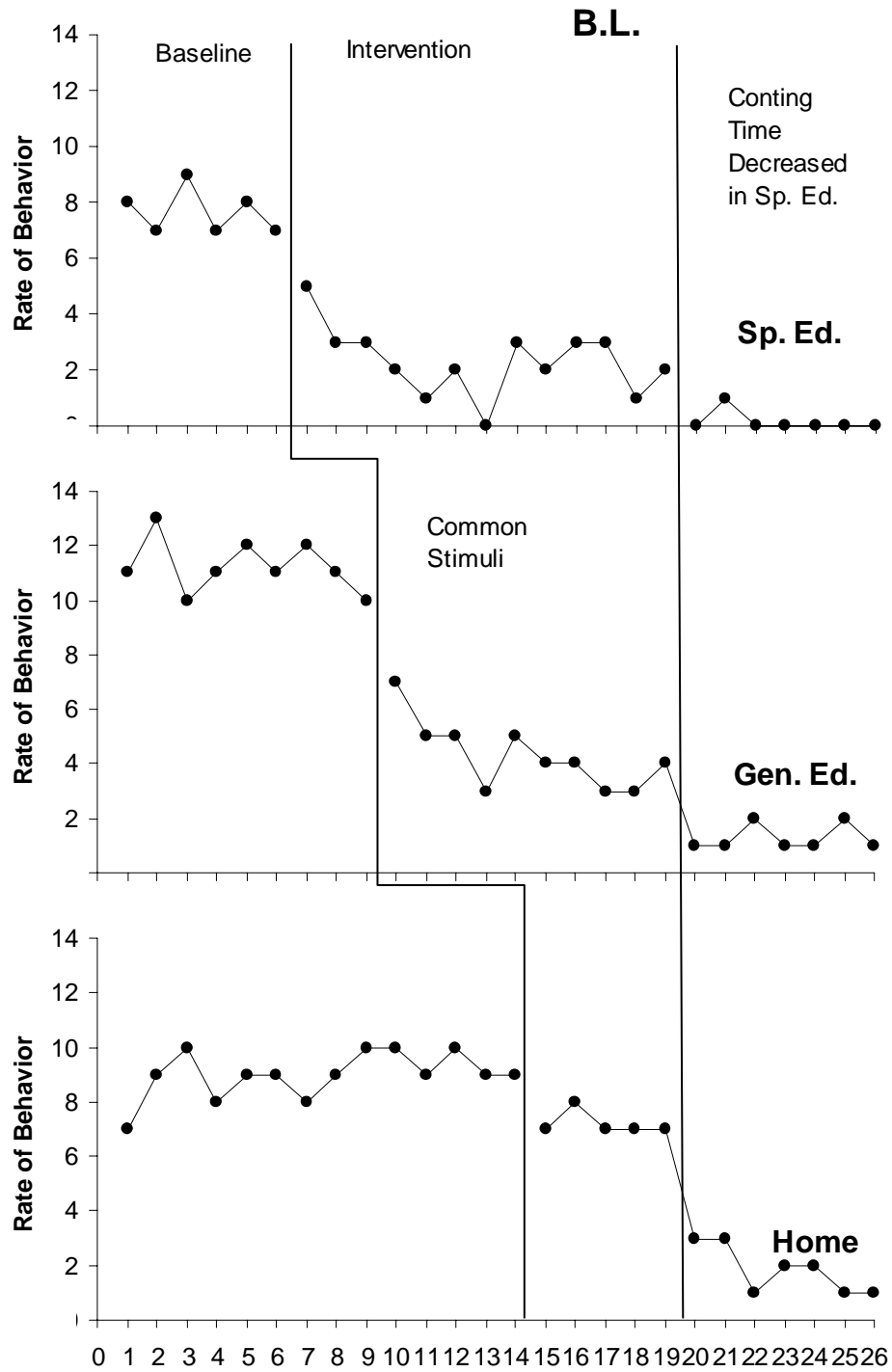
Figure 3. Data observed for B.L. for the target behavior during Baseline

(Baseline), Intervention (Intervention), generalization by programming common

stimuli (Common Stimuli), and decreasing the time of the contingency in the special education setting (Conting Time Decreased in Sp.Ed.).

Case #4 (B.P.)

Results for B.P. are graphically presented in Figure 4. B.P. was a 9 year-old male who attended a local elementary school and had a DSM diagnosis of Asperger's Disorder and an IDEA eligibility of autism. B.P. was initially diagnosed with Asperger's Disorder in March of 2003 when he was 8 years-old. As part of his initial evaluation, B.P. was administered the Woodcock Johnson Tests of Cognitive Abilities, Third Edition (WJ-III Cog). B.P. achieved a GIA of 117, Verbal Ability-128, Thinking Ability-121, and Cognitive Efficiency-105. He received special education services for math while all other classes were within a general education setting. For this case, the special education consultee was the math teacher, the general education consultee was the reading teacher, and the home consultee was the mother. During the CPII with the consultees it was reported that B.P. engaged in repetitively getting out of his seat during work time. Consultees reported this behavior to occur approximately 8-10 times during a 45-minute class period and homework time at home. There was evidence that the behavior was occurring with similar levels of frequency across settings and all consultees expressed concern in regards to the rate of the target behavior. B.P.'s teachers reported the target behavior has been occurring since the beginning of the school year. B.P.'s mother and a file review indicated that similar behaviors have been occurring since he was in Kindergarten. The goal for the rate of the

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target behavior that was collaboratively derived upon by the consultees and consultant within the CPII was 1-2 occurrences.

During the course of the CPII and the CPAI it was decided that the operationalized definition for the target behavior was "getting out of seat during seatwork time". Based on an analysis of antecedent conditions, setting events, consequent conditions, and environmental/sequential conditions, it was hypothesized that the function of the behavior was avoidance of work.

Baseline. Baseline data were collected in the special education setting for 6 days and the average rate of the target behavior was 8.2 occurrences. Baseline data were collected in the general education setting for 9 days and the average rate of the target behavior was 8.6 occurrences. Baseline data were also collected in the home setting for 14 days and the average rate of the target behavior was 8.5 occurrences.

Intervention. An intervention was developed and implemented within the special education setting which was designed to reduce the number and duration of instances in which B.P. got out of his seat while in the special education classroom. The intervention consisted of a visual cue (a picture of a child sitting at their desk and working), verbal cue from the teacher instructing B.P. not to get out of his seat during seat work time, and a contingency which allowed B.P. to have five minutes of free time at the end of the class period if he completed 80% of the task demands without getting out of his seat. After the initial baseline phase, the intervention was implemented daily during a specified time period in the special education setting for the duration of the 45-minute class period. After

initial implementation, the rate of the target behavior decreased to 5 occurrences for the first session and continued to decrease until by fourth session the rate of the behavior was 0 occurrences in the special education setting. The behavior remained at 0 through the completion of the study in the special education setting.

Generalization. Once the effect of the full intervention was established, a partial form of the intervention, based on programming common stimuli, developed for generalization of the target behavior within the general education and home settings was implemented within the multiple baseline design. The partial form of the intervention consisted simply of providing B.P. the visual cue utilized in the full intervention (a picture of a child sitting at their desk and working), along with the same verbal cue provided in the special education setting, but delivered by the general education teacher and mother in the general education setting and home setting respectively. There was no contingency offered in either generalization setting.

Consistent with the multiple baseline design, the partial form of the intervention was implemented first within the general education setting for the duration of the 45-minute class period. Upon implementation, the rate of the target behavior initially decreased to 5 and then fluctuated between 2 and 3 occurrences. After the effect of the partial intervention was established, the same partial form of the intervention was utilized in the home setting during a 45-minute homework period. After initial implementation of the partial intervention,

the rate of the target behavior initially decreased to 2 occurrences the first three days and thereafter decreased to 0-1 occurrences in the home setting.

Once behavior rates were at or below acceptable levels in all settings, it was decided to provide performance feedback to the student on the rate of the behavior in the generalization settings. As a result of this manipulation, the rate of the target behavior decreased to 0-1 occurrences in the generalization settings. It was then decided to remove the contingency associated with the intervention in the training setting (special education classroom). Therefore, the partial form of the intervention used for generalization was now being implemented in the training setting. As a result of this final manipulation, the target behavior remained at low levels in the special education setting as well as in the generalization settings.

Figure 4. Data observed for B.P. for the target behavior during Baseline
(Baseline), Intervention (Intervention), generalization by programming common
stimuli (Common Stimuli), feedback provided to the child (Feedback), and

removing the contingency while providing feedback to the child (Conting

Removed with Feedback).

Case #5 (T.C.)

Results for T.C. are graphically presented in Figure 5. T.C. was a 12 year-old male who attended a local middle school and had a DSM diagnosis of Autistic Disorder and an IDEA eligibility of autism. T.C. was initially diagnosed with Autistic Disorder in August of 1995 when he was 4 years-old. As part of his initial evaluation, T.C. was administered the Wechsler Intelligence Scale for Children, Third Edition (WISC-III) where he achieved a Full Scale IQ-80, Verbal Scale IQ-73, and Performance Scale IQ-90. T.C. has received three subsequent re-evaluations which have yielded the same diagnosis. He received special education services for English, reading, and math while all other classes were within a general education setting. For this case, the special education consultee was the English teacher, the general education consultee was the social studies teacher, and the home consultee was the mother. During the CPII with the consultees it was reported that T.C. engaged in repeatedly tearing completed assignments into pieces. Consultees reported this behavior to occur approximately 5-10 times during a 45-minute class period and homework time at home. There was evidence that the behavior was occurring with similar levels of frequency across settings and all consultees expressed concern in regards to the rate of the behavior. T.C.'s teachers reported the target behavior has been occurring since the beginning of the school year. T.C.'s mother and a file review indicated that similar behaviors have been occurring for several years. The goal

for the rate of the target behavior that was collaboratively derived upon by the consultees and consultant within the CPII was 1-2 occurrences.

During the course of the CPII and the CPAI it was decided that the operationalized definition for the target behavior was "tearing completed tasks into pieces". Based on an analysis of antecedent conditions, setting events, consequent conditions, and environmental/sequential conditions, it was hypothesized that the function of the behavior was attention from peers, teachers, or parents.

Baseline. Baseline data were collected in the special education setting for 6 days and the average rate of the target behavior was 7.5. occurrences. Baseline data were collected in the general education setting for 9 days and the average rate of the target behavior was 6.7 occurrences. Baseline data were also collected in the home setting for 12 days and the average rage of the target behavior was 7.4 occurrences.

Intervention. An intervention was developed and implemented within the special education setting which was designed to reduce the number of instances in which T.C. tore completed tasks into pieces while in the special education classroom. The intervention consisted of a visual cue (a "finished basket" beside his desk), verbal cue from the teacher instructing T.C. not to tear completed assignments into pieces, and the contingency of the teacher frequently checking his work and reminding him to place completed work in the finished basket beside his desk. Once a completed task was in the basket the teacher immediately checked the assignment. After the initial baseline phase, the

intervention was implemented daily during a specified time period in the special

education setting for the duration of the 45-minute class period. After

implementation, the rate of the target behavior decreased to 0 occurrences in the

special education setting.

Generalization. Once the effect of the full intervention was established, a

partial form of the intervention, based on programming common stimuli,

developed for generalization of the target behavior within the general education

and home settings was implemented within the multiple baseline design. The

partial form of the intervention consisted simply of providing T.C. the visual cue

utilized in the full intervention (a "finished basket" placed beside his desk), along

with the same verbal cue provided in the special education setting, but delivered

by the general education teacher and mother in the general education setting

and home setting respectively. There was no contingency offered in either

generalization setting.

Consistent with the multiple baseline design, the partial form of the

intervention was implemented first within the general education setting for the

duration of the 45-minute class period. Upon implementation, the rate of the

target behavior decreased to 0 in the general education setting. After the effect of

the partial intervention was established, the same partial form of the intervention

was utilized in the home setting during a 45-minute homework period. After

implementation of the partial intervention, the rate of the target behavior reduced

to 0 in the home settings.

Once behavior rates were at or below acceptable levels in all settings, it was decided to remove the contingency associated with the intervention in the training setting (special education classroom). Therefore, the partial form of the intervention used for generalization was now being implemented in the training setting. As a result of this final manipulation, the target behavior remained at low levels in the special education setting as well as in the generalization settings.
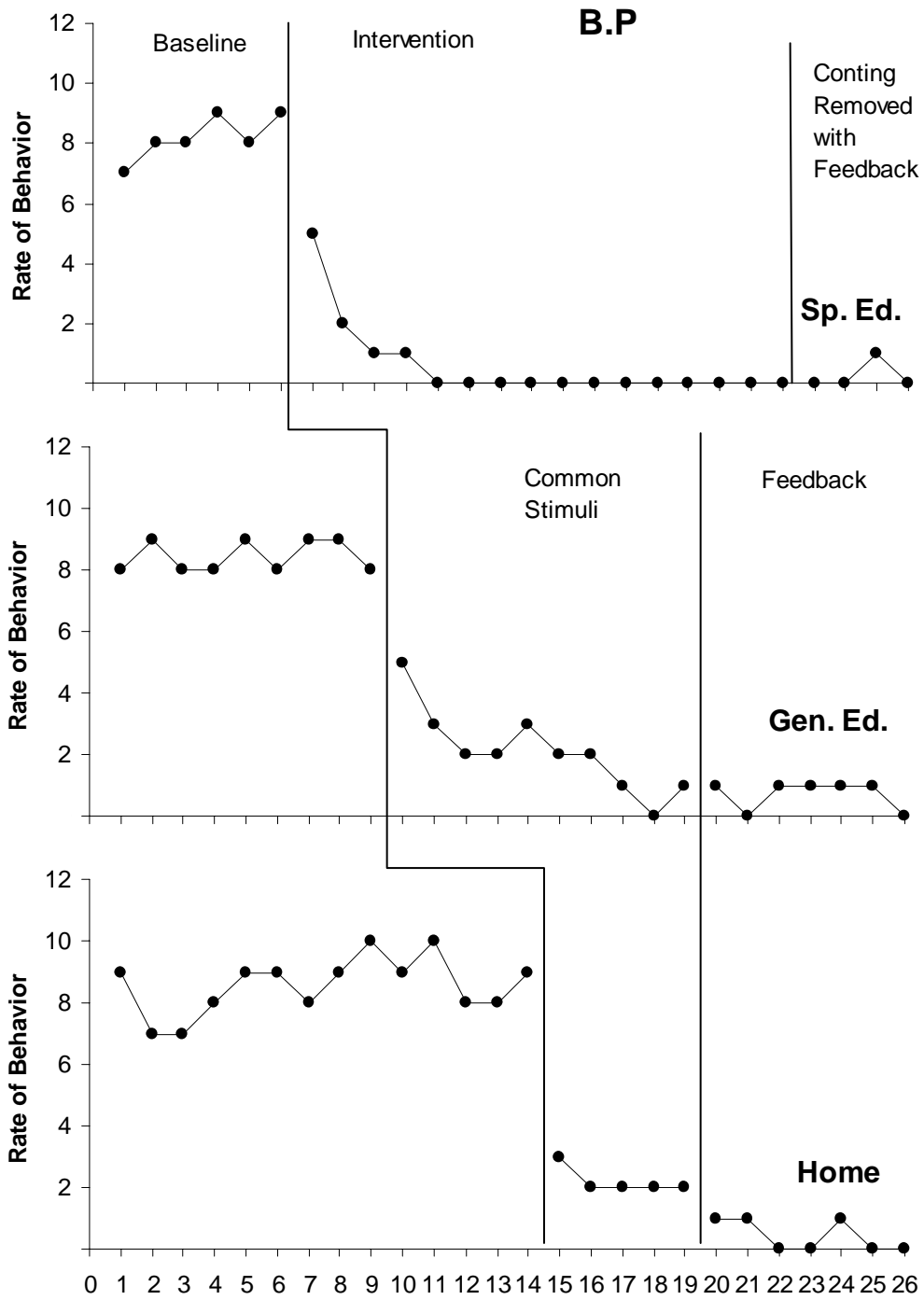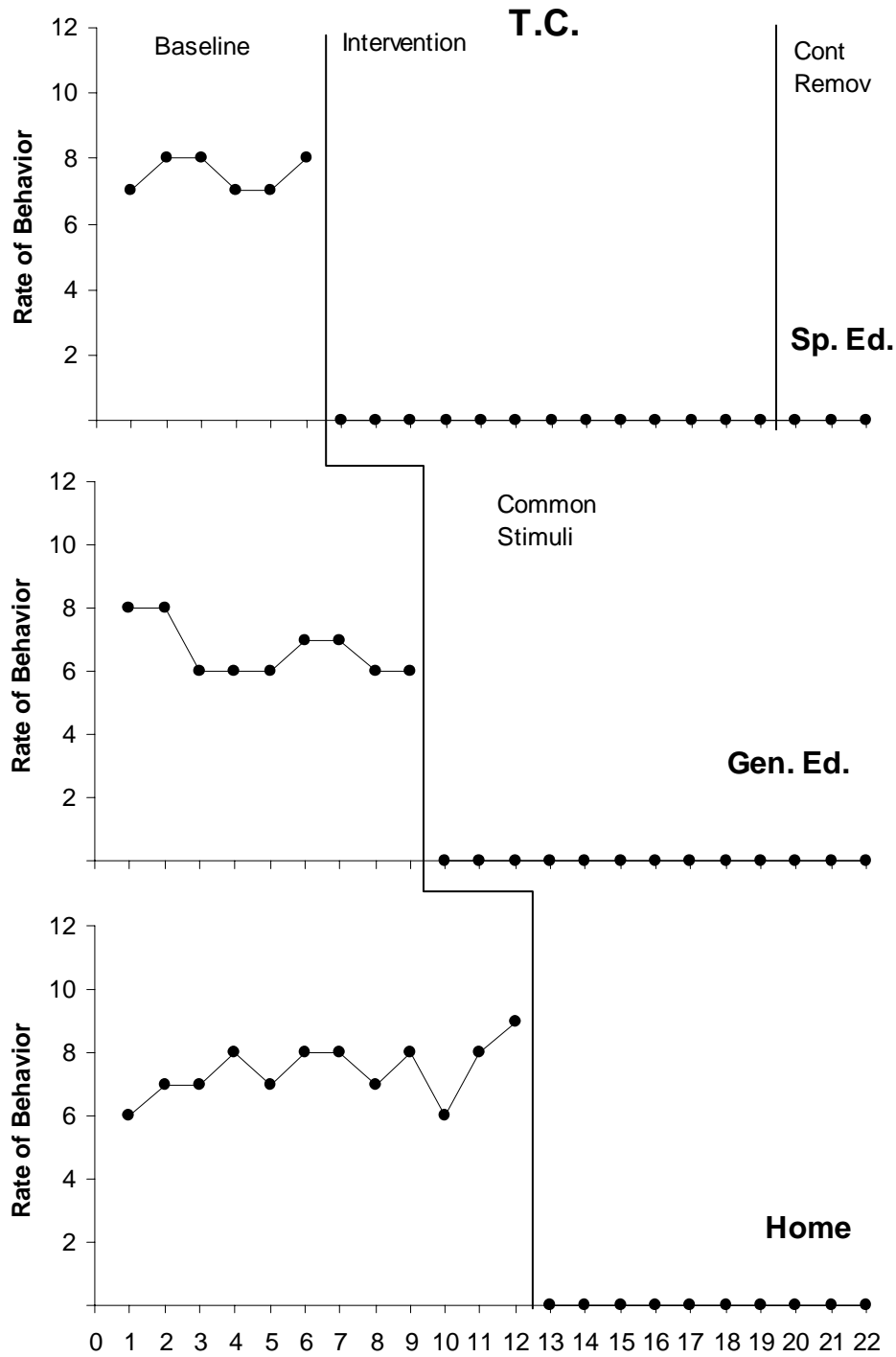
Figure 5. Data observed for T.C. for the target behavior during Baseline

(Baseline), Intervention (Intervention), generalization by programming common

stimuli (Common Stimuli), and removing the contingency (Cont Remov).

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<u>Case #6 (T.M.)</u>

Results for T.M. are graphically presented in Figure 6. T.M. was an 11 year-old male who attended a local middle school and had a DSM diagnosis of Asperger's Disorder and an IDEA eligibility of autism. T.M. was initially diagnosed with Asperger's Disorder in January of 1998 when he was 5 years-old. As part of his initial evaluation, T.M. was administered the Wechsler Intelligence Scale for Children, Third Edition (WISC-III) where he achieved a Full Scale IQ-81, Verbal Scale IQ-92, and Performance Scale IQ-83. T.M. has received two subsequent re-evaluations which have yielded the same diagnosis. He received special education services for math while all other classes were within a general education setting. For this case, the special education consultee was the math teacher, the general education consultee was the English teacher, and the home consultee was the mother. During the CPII with the consultees it was reported that T.M. engaged in repetitive verbalizations. These verbalizations focused mainly on discussions of electronic items including televisions, cameras, videogames, cell phones, and computers. Consultees reported this behavior to occur approximately 10-15 times during a 45-minute class period and homework time at home. There was evidence that the behavior was occurring with similar levels of frequency across settings and all consultees expressed concern in regards to the rate of the behavior. T.M.'s teachers reported the target behavior has been occurring since the beginning of the school year. T.M.'s mother and a file review indicated that similar behaviors have been occurring for 6 years. The

goal for the rate of the target behavior that was collaboratively derived upon by the consultees and consultant within the CPII was 1-2 occurrences.

During the course of the CPII and the CPAI it was decided that the operationalized definition for the target behavior was "talking about electronics (televisions, cameras, videogames, cell phones, and computers) in an audible voice". Based on an analysis of antecedent conditions, setting events, consequent conditions, and environmental/sequential conditions, it was hypothesized that the function of the behavior was attention.

Baseline. Baseline data were collected in the special education setting for 6 days and the average rate of the target behavior was 7.8 occurrences. Baseline data were collected in the general education setting for 9 days and the average rate of the target behavior was 9.4 occurrences. Baseline data were also collected in the home setting for 14 days and the average rage of the target behavior was 9.1 occurrences.

Intervention. An intervention was developed and implemented within the special education setting which was designed to reduce the number and duration of instances in which T.M. verbalized about electronics while in the special education classroom. The intervention consisted of a visual cue (a picture of a camera taped to his work space), verbal cue from the teacher instructing T.M. not to talk about electronics, and a contingency which allowed T.M. 5 minutes to talk about electronics in front of the class at the end of the class period if he did not talk about electronics more than one time during the 45-minute session. After the initial baseline phase, the intervention was implemented daily during a specified

time period in the special education setting for the duration of the 45-minute class period. After initial implementation, the rate of the target behavior decreased to 2 occurrences for the first session and decreased to 0 occurrences by the fourth session in the special education setting.

Generalization. Once the effect of the full intervention was established, a partial form of the intervention, based on programming common stimuli, developed for generalization of the target behavior within the general education and home settings was implemented within the multiple baseline design. The partial form of the intervention consisted simply of providing T.M. the visual cue utilized in the full intervention (a picture of a camera taped to his work space), along with the same verbal cue provided in the special education setting, but delivered by the general education teacher and mother in the general education and home settings respectively. There was no contingency offered in either generalization setting.

Consistent with the multiple baseline design, the partial form of the intervention was implemented first within the general education setting for the duration of the 45-minute class period. Upon implementation, the rate of the target behavior initially decreased to 0 in the general education setting and then fluctuated between 1-3 occurrences. After the effect of the partial intervention was established, the same partial form of the intervention was utilized in the home setting during a 45-minute homework period. After initial implementation of the partial intervention the rate of the target behavior reduced to 6 and steadily continued to decrease to 3 occurrences in the home setting.

Once behavior rates were at or below acceptable levels in all settings, it was decided to provide performance feedback to the student on the rate of the behavior in the generalization settings. As a result of this manipulation, the rate of the target behavior decreased to 1-2 occurrences in the generalization settings. It was then decided to remove the contingency associated with the intervention in the training setting (special education classroom). Therefore, the partial form of the intervention used for generalization was now being implemented in the training setting. As a result of this final manipulation, the target behavior remained at 0 in the special education setting and continued to remain low in the generalization settings.
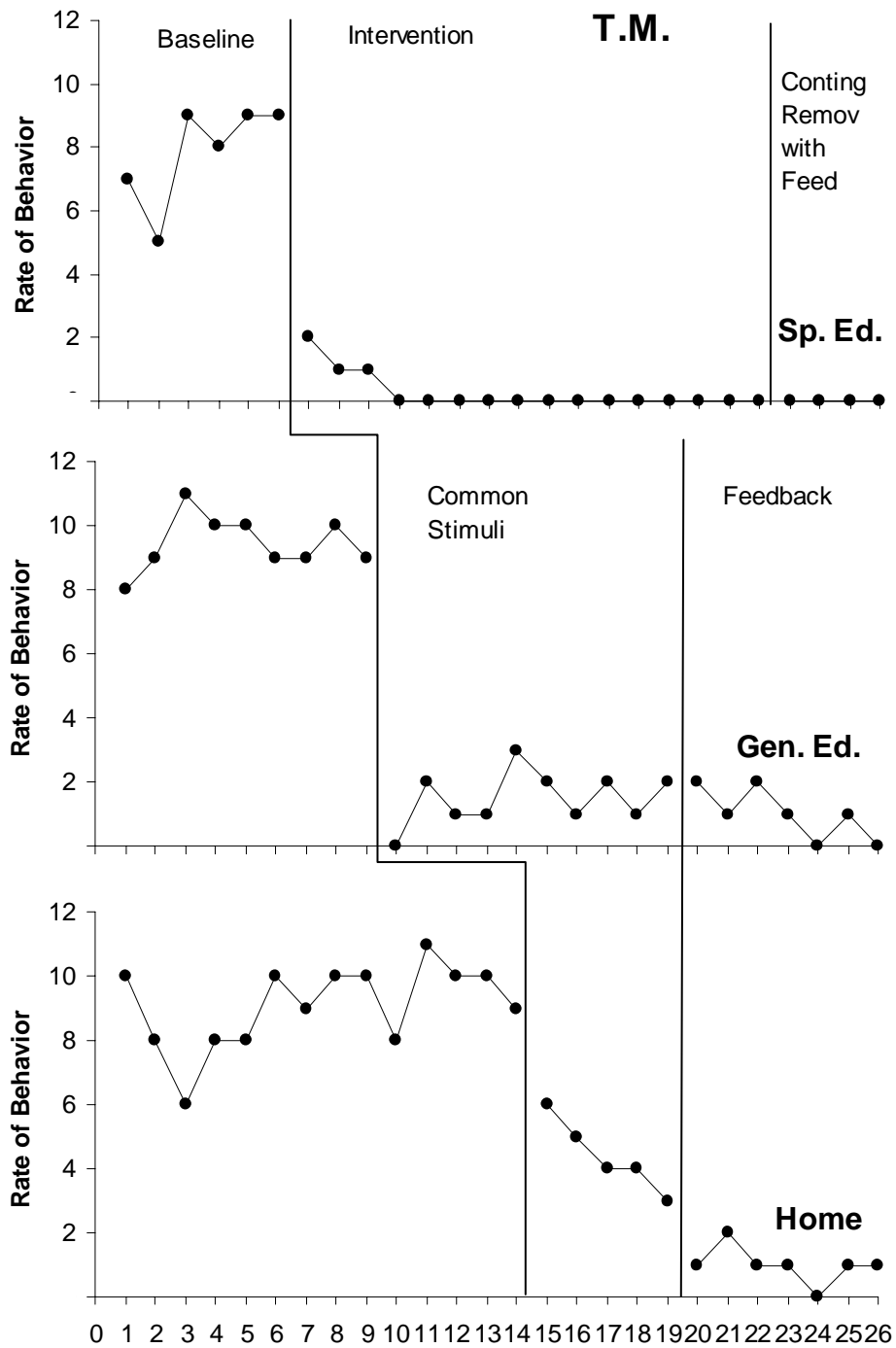
Figure 6. Data observed for T.M. for the target behavior during Baseline
(Baseline), Intervention (Intervention), generalization by programming common
stimuli (Common Stimuli), feedback provided to the child (Feedback), and

removing the contingency while providing feedback to the child (Conting Remov with Feed).

<center>Integrity</center>

A second observer was present for a minimum of 34% of the observations in all settings for all cases, with a range of 34%-55% within each setting, in order to establish reliability of the dependent measure. In order to establish reliability of the dependent measure it is also necessary to have agreement between observers on the frequency of the dependent measure. For each of the six cases in all three settings, observer agreement was 100%.

Treatment integrity data were also collected for each of the six cases in all three settings. Integrity data was collected for each session and run across the length of the study for each case. Treatment integrity refers to the degree to which the consultee implemented the intervention the way it was designed to be implemented and was measured by the percentage of steps of the intervention completed by the consultee. For each of the six cases, treatment integrity was consistently at the 100% level in all settings.

<center>Results of Evaluation Measures</center>

The Goal Attainment Scaling, Consultation Services Questionnaire, Treatment Evaluation Questionnaire, and Intervention Rating Profile – 15 were used to assess consultees perceptions of the effectiveness of the intervention and their acceptability of the Conjoint Behavioral Consultation model as well as the interventions developed from the model. The GAS was incorporated to assess the consultees perceptions of the degree to which stated behavioral goals

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were achieved for the participants. This measure served as an indication of social validity as well as a supplement to the direct measures of target behavior change. The PCSQ and TCSQ were incorporated to assess the consultees levels of satisfaction and acceptability of the consultation model. This measure served as an indication of consultee acceptability of the consultation model. The TEQ was incorporated to assess the consultees perceptions of the effectiveness of the intervention. This measure served as an indication of social validity as well as a supplement to the direct measures of target behavior change. The IRP-15 was incorporated to assess the consultees acceptability of the intervention. This measure served as an indication of consultee acceptability of the intervention.

Goal Attainment Scaling (GAS)

The GAS has parent and teacher forms (Appendix C and D) and was completed by the consultees of the six children with an IDEA eligibility of autism. Parents and teachers were asked to rate the behavior on a scale of "–2, the child is compliant with requests less than 20% of the time", to "+2, the child is compliant with requests 80-100%" of the time. All parent and teacher ratings were a 2, or "the child reached the goal 80%-100% of the time". Children in all cases were successful in demonstrating the desired behaviors in the special education setting, general education setting, and home setting 80% to 100% of the time (Table 3).

Table 3

Parent and teacher responses to the Goal Attainment Scaling Form for the final
week of intervention

Case	Mean	Case	Mean
Case #1		Case #4	
Sp. Ed. Teacher	2	Sp. Ed. Teacher	2
Gen. Ed. Teacher	2	Gen. Ed. Teacher	2
Parent	2	Parent	2
Case #2		Case #5	
Sp. Ed. Teacher	2	Sp. Ed. Teacher	2
Gen. Ed. Teacher	2	Gen. Ed. Teacher	2
Parent	2	Parent	2
Case #3		Case #6	
Sp. Ed. Teacher	2	Sp. Ed. Teacher	2
Gen. Ed. Teacher	2	Gen. Ed. Teacher	2
Parent	2	Parent	2

Parent/Teacher Consultation Services Questionnaire (PCSQ/TCSQ)

The PCSQ/TCSQ (Appendix F and G) were completed by the consultees
of the six children with an IDEA eligibility of autism. Parents and teachers were
asked to record aspects of the consultation services using a 7-point Likert scale
(Table 4). With the exception of items #7, #8, #9, and #10, which were reversed
scored, a rating of "1" reflected the most negative attitude and "7" reflected the

most positive attitude. In order to calculate the mean, items #7, #8, #9, and #10 were reverse scored. Mean scores for parent responses on the PCSQ indicated positive attitudes toward use of the CBC process with the overall mean score for PCSQ=5.73. Parent ratings were between 4 and 7 with the minimum PCSQ rating being a 4, indicating a neutral perception regarding CBC across parent perception. Teacher ratings were also between 4 and 7 with the minimum TCSQ rating being a 4, and the overall mean score for TCSQ=5.83 (special education teachers TCSQ=6.03 and general education teachers TCSQ=5.63).

Table 4

Parent and teacher responses to the Consultation Services Questionnaire

Case	Mean	Case	Mean
Case #1		Case #4	
Sp. Ed. Teacher	6.1	Sp. Ed. Teacher	5.9
Gen. Ed. Teacher	5.1	Gen. Ed. Teacher	5.7
Parent	5.4	Parent	5.6
Case #2		Case #5	
Sp. Ed. Teacher	6.1	Sp. Ed. Teacher	5.9
Gen. Ed. Teacher	6.1	Gen. Ed. Teacher	5.7
Parent	6.1	Parent	6.1
Case #3		Case #6	
Sp. Ed. Teacher	5.9	Sp. Ed. Teacher	6.3
Gen. Ed. Teacher	5.5	Gen. Ed. Teacher	5.7
Parent	5.5	Parent	5.7

Treatment Evaluation Questionnaire-Parent/Teacher

(TEQ-P/T)

  The TEQ has parent (TEQ-P) and teacher (TEQ-T) forms (Appendix H

and I) and was completed by the consultees of the six children with an IDEA

eligibility of autism. Parent and teacher consultees were asked to rate the

effectiveness of the intervention on a 6 – point Likert scale (1 = "strongly

disagree" to 6 = "strongly agree") (Table 5). Based on a 6-point scale, scores for

the six cases on the TEQ-P ranged from a 2, or "Disagree" to a 6, "Strongly

Agree", with an overall mean TEQ-P=5.12. TEQ-T scores ranged from a 2, or

"Disagree", to a 6, "Strongly Agree", with an overall mean Teacher TEQ-T=5.03

(special education teachers TEQ=5.15 and general education teachers

TEQ=4.90). The only question that received a 2 rating, or "Disagree", was

reported by teachers and parents for Case #2 and Case #6, item #21 (Other

behaviors related to the problem behavior also were improved by the

intervention).

Table 5

Parent and teacher responses to the Treatment Evaluation Questionnaire

Case	Mean	Case	Mean
Case #1		Case #4	
Sp. Ed. Teacher	5.24	Sp. Ed. Teacher	4.76
Gen. Ed. Teacher	4.76	Gen. Ed. Teacher	4.81
Parent	5.00	Parent	5.00
Case #2		Case #5	
Sp. Ed. Teacher	4.95	Sp. Ed. Teacher	5.71
Gen. Ed. Teacher	4.81	Gen. Ed. Teacher	5.38
Parent	4.95	Parent	5.95
Case #3		Case #6	
Sp. Ed. Teacher	4.86	Sp. Ed. Teacher	5.38
Gen. Ed. Teacher	4.38	Gen. Ed. Teacher	5.24
Parent	4.38	Parent	5.43

Intervention Rating Profile-15 (IRP-15)

Parents and teachers of the six children with an IDEA eligibility of autism completed the IRP-15 (Appendix E). Parent and teacher consultees were asked to rate the intervention based on a 6-point scale. Scores for the six cases on the IRP-15 ranged from a 4, or "Slightly Agree" to a 6, "Strongly Agree", with an overall mean parent IRP-15=5.46. IRP-15 teacher scores ranged from a 4, or "Slightly Agree", to a 6, "Strongly Agree", with an overall mean teacher IRP-

15=5.46 (special education teachers IRP-15=5.47 and general education

teachers IRP-15=5.45) (Table 6).

Table 6

<u>Parent and teacher responses to the Intervention Rating Profile-15 Questionnaire</u>

Case	Mean	Case	Mean
Case #1		Case #4	
Sp. Ed. Teacher	6.00	Sp. Ed. Teacher	5.00
Gen. Ed. Teacher	6.00	Gen. Ed. Teacher	4.87
Parent	6.00	Parent	5.00
Case #2		Case #5	
Sp. Ed. Teacher	5.27	Sp. Ed. Teacher	6.00
Gen. Ed. Teacher	5.27	Gen. Ed. Teacher	6.00
Parent	5.13	Parent	6.00
Case #3		Case #6	
Sp. Ed. Teacher	5.00	Sp. Ed. Teacher	5.53
Gen. Ed. Teacher	5.00	Gen. Ed. Teacher	5.53
Parent	5.00	Parent	5.60

CHAPTER FIVE

DISCUSSION OF RESULTS, IMPLICATIONS, LIMITATIONS,

BENEFITS, AND FUTURE RESEARCH

Discussion of Results

Children with autistic disorder have been studied extensively. Much is

known about the diagnosis and behavioral interventions for reducing behavioral

excesses in children with autism. Previous research with interventions for

reducing behavioral excesses in children with autism has yielded a body of

literature suggesting that trained service providers must implement direct service

interventions in order to have effective outcomes; however, direct service

interventions require a significant amount of time, money, and energy. Thus,

there need to be alternatives to direct intervention for children with autism. Of

particular interest is the integration of resources in working with these children.

An alternative to direct service intervention is a consultation model which could

be used to train teachers and parents the skills to effectively reduce behavioral

excesses in children with autism. Another interest is the generalization of skills

between home and school. Previous research also suggests that children with

autism have difficulty with the generalization of skills between home and school

(Mash & Barkley, 1996). Conjoint Behavioral Consultation is a consultation model that integrates home and school within the intervention and which should, therefore, promote generalization of skills between settings.

The conceptual bases of the CBC model suggest potential for positive outcomes when used with parents and teachers of children with autism. Thus, the purpose of this study was to investigate the effectiveness of CBC in promoting the success of elementary and secondary school age children with an IDEA eligibility of autism when addressing behavioral excesses in the special educational classroom, regular education classroom, and the home. As part of this study several questions were addressed, thus, discussion of results will follow a format dictated by the study's seven substantive questions considering effectiveness, acceptability, and generalization.

Question #1: Does the application of consultation result in an effective intervention for reducing the levels of identified behavioral excesses across elementary and secondary school age children in special education with an IDEA eligibility of autism?

Research Question #1 only addressed the effectiveness of consultation in the first setting (special education classroom) as consultation is only necessary in one setting. The effects of the intervention were evaluated by the GAS and the visual inspection of the difference between the baseline and intervention phase of the study within the special education setting.

All special education teacher ratings on the GAS were a 2, or "the child reached the goal 80%-100% of the time". Children in all cases were successful in

demonstrating the desired behaviors in the special education environment 80%-100% of the time. Special education teacher responses on the GAS indicated overall improvement of target behaviors for all six children. Furthermore, for all six cases there was a decrease in the rate of the target behavior based on a comparison of the difference between the baseline phase and special education intervention phase of the study.

Based on these data, there is evidence that the application of consultation can serve as an effective service delivery model for elementary and secondary school age children with autism.

Question #2: Can the application of the Conjoint Behavioral Consultation Model result in an intervention that effectively reduces the levels of identified behavioral excesses across settings (special education classroom, regular education classroom, and home) for elementary and secondary school age children with an IDEA eligibility of autism?

Research Question #2 addressed the effects of the CBC model across settings as CBC occurs across settings. The effects of the CBC model were evaluated by the GAS and visual inspection of the difference between the baseline and intervention phases of the study.

All special education teacher, general education teacher, and parent ratings on the GAS were a 2, or "the child reached the goal 80%-100% of the time". Children in all 6 cases were successful in demonstrating the desired behaviors in the special education setting, general education setting, and home setting 80% to 100% of the time. Special education teacher, general education

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teacher, and parent responses on the GAS indicated overall improvement of target behaviors for all six children. Furthermore, for all six cases there was a decrease in the rate of the target behavior based on a comparison of the difference between the baseline phase and special education, general education, and home intervention phases of the study.

Based on these data, there is evidence that the application of the CBC model can serve as an effective service delivery model for elementary and secondary school age children with autism.

Question #3: Can generalization across settings be programmed to produce treatment effects for elementary and secondary school age children who display behavioral excesses and have an IDEA eligibility of autism?

The effects of generalization were evaluated through visual inspection of the difference between the baseline phase and intervention within the generalization settings (general education and home).

For 4 of the 6 cases, generalization of target behavior reduction occurred across settings (general education classroom and home) and resulted in a treatment effect that was similar to that of the effect in the training setting.

Based on these data, there is evidence that generalization can be programmed across settings to reduce behavioral excesses in elementary and secondary school age children with autism.

Question #4: Is Conjoint Behavioral Consultation, between home and school, an
acceptable model for the parents and teachers of elementary and secondary
school age children who display behavioral excesses and have an IDEA eligibility
of autism?

Research Question #4 addressed parent and teacher acceptability of the
process of the CBC model. The acceptability of the CBC model was evaluated by
the PCSQ/TCSQ.

Parents and teachers found the CBC process acceptable for decreasing
behavior excesses. Scores for parent and teacher responses on the
PCSQ/TCSQ indicated positive attitudes toward use of the CBC process.

Based on these data, there is evidence that CBC is an acceptable model
for parents and teachers of elementary and secondary school age children with
autism.

Question #5: Will the parents and teachers of elementary and secondary school
age children who display behavioral excesses and have an IDEA eligibility of
autism find the intervention acceptable?

Research Question #5 addressed parent and teacher acceptability of the
intervention developed through the CBC model. The acceptability of the
interventions were evaluated by the TEQ-P/T and the IRP-15.

Parents and teachers of the six children with an IDEA eligibility of autism
found the intervention developed during CBC acceptable according to their
responses on the TEQ. Parent and teacher ratings suggest overall satisfaction
with parent and teacher ratings reflecting a range of satisfaction with the

treatment interventions developed and implemented during CBC. In addition, parents and teachers responses to the IRP-15 also indicated acceptability of the intervention. Parent and teacher ratings suggest overall satisfaction with ratings reflecting a range of satisfaction with the treatment interventions developed and implemented during CBC.

Based on these data, there is evidence that parents and teachers find interventions developed through the CBC model acceptable for elementary and secondary school age children with autism.

Question #6: How will levels of intervention effectiveness relate to consultee treatment integrity?

The effects of the intervention were evaluated by the GAS. Consultee treatment integrity was measured by the percentage of steps of the intervention completed by the consultee.

All special education teacher, general education teacher, and parent ratings on the GAS were a 2, or "the child reached the goal 80%-100% of the time". Children in all 6 cases were successful in demonstrating the desired behaviors in the special education setting, general education setting, and home setting 80% to 100% of the time. Special education teacher, general education teacher, and parent responses on the GAS indicated overall improvement of target behaviors for all six children. Furthermore, for all six cases there was a decrease in the rate of the target behavior based on a comparison of the difference between the baseline phase and special education, general education, and home intervention phases of the study.

Consultee treatment integrity refers to the degree to which the consultee implemented the intervention the way it was designed to be implemented and was measured by the percentage of steps of the intervention completed by the consultee. Based on treatment integrity data which were collected during the implementation of the interventions in the home and school settings, integrity was consistently at the 100% level for all cases.

A Pearson Product Moment Correlation was run for the relationship between outcomes on the GAS and consultee integrity; however, the correlation could not be computed because at least one of the variables was constant. Thus, Question #6 was unable to be answered because intervention effectiveness, as well as consultee treatment integrity was high for all of the consultation cases. It was expected that with lower levels of treatment integrity, there would be lower levels of intervention effectiveness and with higher levels of treatment integrity, there would be higher levels of intervention effectiveness. However, levels of treatment integrity and intervention effectiveness were so high and stable that this question was unable to be answered.

Question #7: What is the relation between the consultee's acceptability of the intervention and consultee integrity when implementing the intervention?

The effects of the acceptability of the intervention were evaluated by the TEQ-P/T and the IRP-15. Consultee treatment integrity was measured by the percentage of steps of the intervention completed by the consultee.

Parents and teachers of the six children with an IDEA eligibility of autism found the intervention developed during CBC acceptable according to their

responses on the TEQ-P/T. Parent and teacher ratings suggest overall satisfaction with parent and teacher ratings reflecting a range of satisfaction with the treatment interventions developed and implemented during CBC. In addition, parents and teachers responses to the IRP-15 also indicated acceptability of the intervention. Parent and teacher ratings suggest overall satisfaction with ratings reflecting a range of satisfaction with the treatment interventions developed and implemented during CBC.

Consultee treatment integrity refers to the degree to which the consultee implemented the intervention the way it was designed to be implemented and was measured by the percentage of steps of the intervention completed by the consultee. Based on treatment integrity data which were collected during the implementation of the interventions in the home and school settings, integrity was consistently at the 100% level for all cases.

A Pearson Product Moment Correlation was run for the relationship between outcomes on the TEQ and the IRP-15 and consultee integrity; however, the correlation could not be computed because at least one of the variables was constant. Thus, Question #7 was unable to be answered because consultee acceptability for the intervention was high, as well as levels of consultee treatment integrity. It was expected that with lower levels of intervention acceptability, there would be lower levels of consultee treatment integrity. However, as with question #6 levels of intervention acceptability and consultee treatment integrity were so high and stable that this question was unable to be answered.

The participants in CBC in this study included elementary and secondary age children as the clients, parents and special education and general education teachers as the consultees and the researcher as the consultant. By incorporating information from both home and school environments, a more comprehensive assessment of each child was obtained. Interventions developed based on such an assessment have increased the likelihood of positive outcomes within those environments, and, therefore, promote success for the children involved.

<div align="center">Implications</div>

The collaborative philosophy underpinning the structured behavior change model of CBC affords the researcher or practitioner the opportunity to accommodate for the unique qualities and needs of the participants. The following recommendations are made based on results and experiences gained during this study, and are considered applicable to CBC. For the cases in this study, the home consultee that participated in the CBC sessions were the mother's of the clients. Because interventions should be consistent across settings, it would be important to include the father of the client or other caregivers in the home to participate as home consultants.

Probably the greatest challenge to the use of CBC experienced during the course of this study was associated with data collection. The collection of observable and measurable data from which to identify target behaviors, develop interventions, and evaluate the success of those interventions is an integral component of the CBC process, as with all behavior consultation models. Daily

collection and recording of data for the 6 cases in each setting was an extensive undertaking for one consultant. Thus, it is recommended that for multiple consultation cases having multiple consultants would be beneficial.

One of the typical challenges to consultation research is consultee Intervention integrity. Having consultees implement the intervention the way it was intended to be implemented is often a difficult challenge. For the present study, implementation integrity data was very high and consistently at the 100% level in all settings for all cases. There are several possible reasons for the obtained high levels of compliance in implementing the intervention for this particular study. For the children in this study, all of the client's were already in special education and receiving services. This may have impacted intervention integrity as all teachers and parents involved did not have the expectation that the client would be removed from the classroom or receive services from another individual. All consultees understood that they would be implementing the interventions within their classroom and home settings. In addition, one of the benefits to the CBC model is that all consultees meet together for all sessions and meetings as part of the nature of this collaborative approach. Thus, all consultants know they are responsible for some part of the intervention in order for it to be successful. Lastly, because reliability data was often collected, meaning a second observer was often present, consultants may have been more likely to implement the intervention with integrity.

In conclusion, contributions of this study include (1) support for the use of CBC with teachers and parents of children with autism as reflected by

effectiveness of the interventions and acceptability of the CBC model and interventions developed from the consultation model, (2) increased knowledge and understanding for promoting generalization of skills across settings for children with autism, and (3) enhanced knowledge pertaining to alternative service delivery models addressing the needs of children with autism.

Limitations of the Study

The specific characteristics of this study's participants must be considered with respect to external validity. Though such is a legitimate concern associated with all research, inferences from small-n case studies must be offered with particular caution as being representative of the larger population. Therefore, the results from this study are only representative of the six cases involved. Greater generalizations cannot be appropriately made without additional small-n studies. Similarly, studies encompassing more grade levels, age levels, and across varied geographic locations are necessary for generalization of results beyond the elementary and secondary level in this Midwest city. Also, as with other studies whose participants are volunteers, the mothers may have had a propensity to collaborate with their children's teachers greater than that of families that did not volunteer. Thus, a bias toward successful participation and satisfaction would have been present from the start. Lastly, for the purposes of this study, children with an autism eligibility receiving services within the special education setting as well as the general education setting were utilized. Because there was a need for children with an autism eligibility who also had placements within a general

education setting, it is likely the cases were less severe. With more severe cases, results may be different.

Limitations relevant to internal validity are associated with the multiple baseline design. A limitation of this study was that CBC was not compared to another consultation model or form of intervention. However, the design of the study allowed for comparisons of baseline data to intervention data to determine effectiveness of the intervention. In addition, antecedent manipulations were not tested prior to the implementation of the full intervention, thus it may be that generalization was not occurring, but the cue used could have served as an intervention independent of the full intervention. However, this is unlikely due to the arbitrary nature of the stimuli and the pervasiveness of the behaviors. For the purposes of this study, data was only collected on the frequency of the target behavior, acceptability of the intervention and the CBC model, and effectiveness of the intervention and the CBC model. Thus, another limitation of this study is that data was not collected on the possible social and academic benefits of interventions developed and implemented through CBC. Reliance on self-report measures in this study is another reason for cautious interpretation. However, their possible biased effects were greatly reduced due to systematic data collection with regard to treatment effectiveness and treatment integrity. Consideration must also be given to the diagnostic differences between Asperger's Disorder and autistic disorder. Although there are differences in diagnostic criteria, both DSM diagnoses fall under the IDEA eligibility of Autism.

Benefits of the Study

There are several benefits to the information gained from this study. The effectiveness of the interventions derived from the CBC model offer an alternative to direct service for addressing behavioral excesses in children with autism. The findings may also open up a new area of research for using consultation models to develop interventions for individuals with autism. Using the CBC model also allows parents and teachers to be involved in the intervention process as opposed to the current interventions which are offered through direct services. As for psychologists, this consultation model provides an alternative intervention that is not as time consuming as direct service interventions which allows psychologists to serve more children. This study will also benefit children with autism as the interventions derived from the CBC model will help learning new skills across settings easier.

Future Research

The results as well as the limitations associated with this study provide bases from which future research may be launched. Certainly, additional small-n replications would provide additional information relevant to the generalizability of these findings and inferences to the population of children with autism. Meta-analysis of such studies may then address variables including target behaviors, age, grade level, and DSM diagnosis (Asperger's Disorder versus autistic disorder). In addition, further research could investigate longer term follow-up on the effects of the study and maintenance of the target behavior across settings. CBC is but one model for school consultation. Future studies that compare and

contrast CBC with other consultation and problem-solving models, such as teacher-only, parent-only, and expert, when addressing the needs of children with autism would benefit the ongoing efforts to improve service delivery to this growing population of students. A child's school success is a consideration over time. Therefore, a longitudinal study involving a CBC experimental group and a control group would be useful in providing data as to the differences in parent involvement and behavioral impact as children progress through school. Future studies should also collect data and examine the potential social and academic benefits of interventions developed and implemented through CBC. For the purposes of the present study, if generalization was unsuccessful, the full intervention was implemented. For generalization purposes, future studies may attempt to implement other generalization procedure before implementing the full intervention. The incorporation of this study into subsequent research is viable in addressing effective service delivery in the nation's public schools so all children with an autism spectrum disorder may experience success.

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APPENDIX A

Conjoint Problem Identification Interview

CONJOINT PROBLEM IDENTIFICATION INTERVIEW (CPII)

Child's Name: _____ Date:_____

Parent's Name: _____ Age: _____

Teacher's Name: _____ Grade: _____

School:_____ Consultant: _____

Goals of the CPII.

- Establish a working relationship between parents and teacher and between the consultant and consultees.
- Define the problem(s) in behavioral terms.
- Provide a tentative identification of behavior in terms of antecedent, situation, and consequent conditions across settings.
- Provide a tentative strength of the behavior across settings (e.g., how often or severe).
- Discuss and reach agreement on a goal for behavior change across settings.
- Establish a procedure for collecting baseline data across settings in terms of sampling plan. What is to be recorded, who is to record the data, and how the behavior is to be recorded.

The consultant should question and/or comment on all of the following.

OPENING SALUTATION

GENERAL STATEMENT TO OPEN CONSULTATION
What seems to be the problem? What is it that you are concerned about?

<div style="display:flex; justify-content: space-around;"> Home   School </div>

BEHAVIOR SPECIFICATION

a. Tell me what you mean by... Give me some specific examples of what you mean by. What does the child do?

<div style="display:flex; justify-content: space-around;"> Home   School </div>

b. What are some more examples?

<div style="display:flex; justify-content: space-around;"> Home   School </div>

c.   We've discussed several behaviors, such as… Which of these is most problematic across settings?
      Prioritize one or two behaviors to target across settings.

                          Home   School

TARGET BEHAVIOR DEFINITION
Let's define exactly what we mean by… What would be a good definition of…?

Summarize Target Behavior in Precise Observable Terms

HISTORY OF PROBLEM
Approximately when did this specific problem begin? How long has this been a problem?

BEHAVIOR SETTING

a.   Where does the child display this target behavior? Give me some examples of where this occurs.
                        Home   School

b.   What are some more examples of where this specific behavior occurs?
                        Home   School

c.   Which of the settings at school is most problematic? Which of the settings at home is most
        problematic? *Establish one setting priority at home and one at school.*
                        Home   School

CONDITIONAL/FUNCTIONAL ANALYSIS

Home   School

<u>Antecedent Conditions and Setting Events</u>

      What typically happens at home/school before the behavior occurs?

      What is a typical morning like before your child goes to school?

      What events occur earlier in the day (in other settings or times of the day) that might affect the child's behavior?

<u>Consequent Conditions</u>

      What typically happens at home/school after the behavior occurs?

      How are school-related behavior problems handled at home?

<u>Environmental/Sequential Conditions</u>

      What else is typically happening at home/school when the behavior occurs?

      What time of day or day of week is the behavior most/least likely to occur?

      What activities are most/least likely to produce the behavior?

      With whom are the behaviors most/least likely to occur?

      How many other people are in the setting when the behavior is most likely to occur?

CONDITIONAL/FUNCTIONAL ANALYSIS (continued)

<div style="text-align:right">Home   School</div>

Environment/Sequential Conditions

What are some other particular situations that might "set off" the behavior?

What other events (e.g., medications, medical complications, routines) may affect the behavior?

BEHAVIOR STRENGTH ACROSS SETTINGS
How often does this behavior occur at home/at school? How long does it last?

Home   School

Summarize/Validate the Specific Behavior and Its Strength

GOAL OF CONSULTATION
What would be an acceptable level of this behavior at home/at school? What would the child have to do to get along OK? Is there general agreement of our goal across home and school?

Home   School

EXISTING PROCEDURES

What are some programs or procedures that are currently operating in the classroom? How are problems currently dealt with when they occur at home/at school?

Home   School

CHILD'S STRENGTHS/ASSETS
What are some of the things that the child is good at? What are some of the child's strengths?

POSSIBLE REINFORCERS
What are some things (events, activities, etc.) that the child finds reinforcing? What are some things the child likes to do?

Summarize Validate Behavior, Strength, Goal, etc.

RATIONALE FOR DATA COLLECTION

It would be very helpful to watch the behavior for a week or so and monitor its occurrence. This will help us key in on some important facts that we may have missed, and also help us document the progress that is made towards our goal.

CROSS-SETTING DATA COLLECTION PROCEDURES
What would be a simple way for you to keep track of the behavior at home/at school?

Home   School

Summarize/Validate Data Collection Procedures

APPENDIX B

Conjoint Problem Analysis Interview

CONJOINT PROBLEM ANALYSIS INTERVIEW (CPAI)

Child's Name: _____ Date: _____

Parent's Name: _____ Age: _____

Teacher's Name: _____ Grade: _____

School:_____ Consultant: _____

The goals of the CPAI are to:
- Evaluate and obtain agreement on the sufficiency and adequacy of baseline data across settings.
- Conduct a functional analysis of the behavior across settings (i.e., discuss antecedent, consequent, and sequential conditions).
- Identify setting events (events that are functionally related, but temporally or contextually distal to the target behavior), ecological conditions, and other cross-setting variables that may impact the target behavior.

The consultant should question and or comment on the following

OPENING SALUTATION

GENERAL STATEMENT REGARDING DATA AND PROBLEM
Were you able to keep a record of the behavior?
                     Home   School

BEHAVIOR STRENGTH ACROSS SETTING
According to the data, it looks like the behavior occurred _____ at home/at school. *Record data here.*
                     Home   School

ANTECEDENT CONDITIONS
What did you notice before the problem occurred at home/at school? What things may have led up to its occurrence? What happened before school on these days? *Refer to baseline data!*
                     Home   School

CONSEQUENT CONDITIONS

What typically happened after the occurrence of the behavior at home/at school? What types of things did you notice afterward that may have maintained its occurrence? What happened after school on these days? *Refer to baseline data!*

Home	School

SEQUENTIAL CONDITIONS

What else was happening in the classroom/playground/home when the behavior occurred? What time of day or day of week seemed most problematic at home/at school? What patterns did you notice in the child's behavior at home/at school?

Home	School

Summarize/Validate Behavior/Strength/Conditions

BEHAVIOR INTERPRETATION

Why do you think the child does this? It sounds like the behavior might also be related to…

Home	School

CROSS-SETTING PLAN DEVELOPMENT
It seems that we need to try something different. What can be done at both home and school to reach our goal? *A written plan for teacher and parents may be helpful.*

Home   School

Summarize/Validate Plan Across Settings

DATA RECORDING PROCEDURES
It would be very helpful if we could continue to collect data on the child's behavior. Can we continue the same recording procedure as before?

Home   School

NEXT APPOINTMENT
When can we all get together again to discuss the data and determine where to go from here?

CLOSING SALUTATION

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APPENDIX C

Goal Attainment Scaling – Parent Form

GOAL ATTAINMENT SCALING- PARENT FORM

    Goal attainment scaling (GAS) provides a method for quantifying parents' and teachers' reports of treatment progress with regard to a target behavior and problem situation. The consultant will be responsible for working with parents to provide an overview of the goal attainment scale during the later portion of the initial visit.

    The basic elements of a goal attainment scale are a five point scale ranging from a +2 to a -2 and descriptions of the target behavior and problem situation that correspond to the following conditions: Best possible behavior (+2) to Worst possible behavior (-2). The example below provides the framework for which parents should rate treatment progress. Example:

+2 The child is compliant with parental requests 80 to 100 % of the time
+1 Child is compliant 60 to 80% of the time
0   Child is compliant about 50% of the time
-1 Child is compliant about 20 to 40% of the time
-2 Child is compliant with parental requests less than 20% of the time

Individualized Scale:
+2 _____
+1 _____
0 _____
-1 _____
-2 _____

    By using the numerical ratings for each of the five descriptive categories of behavioral functioning, parents should be able to provide a weekly report of treatment progress. These data accompany other more direct indicators of progress (e.g., direct observations).

GAS Progress Report
Put an X in the box that best represents your rating for each of the following weeks.

2																
1																
0																
-1																
-2																
wk	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

APPENDIX D

Goal Attainment Scaling – Teacher Form

GOAL ATTAINMENT SCALING- TEACHER FORM

Goal attainment scaling (GAS) provides a method for quantifying parents' and teachers' reports of treatment progress with regard to a target behavior and problem situation. The consultant will be responsible for working with teachers to provide an overview of the goal attainment scale during the later portion of the initial visit.

The basic elements of a goal attainment scale are a five point scale ranging from a +2 to a -2 and descriptions of the target behavior and problem situation that correspond to the following conditions: Best possible behavior (+2) to Worst possible behavior (-2). The example below provides the framework for which teachers should rate treatment progress. Example:

+2   The child is compliant with parental requests 80 to 100 % of the time
+1   Child is compliant 60 to 80% of the time
0   Child is compliant about 50% of the time
-1   Child is compliant about 20 to 40% of the time
-2   Child is compliant with parental requests less than 20% of the time

Individualized Scale:

+2   _____
+1   _____
0   _____
-1   _____
-2   _____

By using the numerical ratings for each of the five descriptive categories of behavioral functioning, teachers should be able to provide a weekly report of treatment progress. These data accompany other more direct indicators of progress (e.g., direct observations).

GAS Progress Report
Put an X in the box that best represents your rating for each of the following weeks.

2																
1																
0																
-1																
-2																
wk	I	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

APPENDIX E

Intervention Rating Profile – 15

Intervention Rating Profile - (IRP-15)

Please rate the intervention along the following dimensions. Please circle the number which best describes our agreement or disagreement with each statement.

	Strongly Disagree	Disagree	Disagree Slightly	Slightly Agree	Agree	Strongly Agree
1. This would be an acceptable intervention for a child's problem behavior.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for behavior problems in addition to the one described.	1	2	3	4	5	6
3. This intervention should prove effective in changing a child's problem behavior.	1	2	3	4	5	6
4. I would suggest this intervention to other teachers.	1	2	3	4	5	6
5. The child's behavior is severe enough to warrant use of this intervention.	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for behavior problem described.	1	2	3	4	5	6
7. I would be willing to use this intervention in the classroom setting.	1	2	3	4	5	6
8. This intervention would *not* result in negative side-effects for the child.	1	2	3	4	5	6
9. This intervention would be appropriate for a variety of children.	1	2	3	4	5	6
10. This intervention is consistent with those I have used in classroom settings.	1	2	3	4	5	6
11. The intervention was a fair way to handle the child's problem behavior.	1	2	3	4	5	6
12. This intervention is reasonable for the problem behavior described.	1	2	3	4	5	6
13. I liked the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention is a good way to handle this child's behavior.	1	2	3	4	5	6
15. Overall, this intervention would be beneficial for a child.	1	2	3	4	5	6

APPENDIX F

Consultation Services Questionnaire – Parent Form

PARENT CONSULTATION SERVICES QUESTIONNAIRE

Thank you for your participation in this consultation project. Your cooperation has been greatly appreciated. The following questionnaire is part of an evaluation of the project. The information obtained will help us evaluate the project; therefore, it is important that you respond as honestly as possible.

Please circle the response that best expresses your feelings.

1. The major problem that originally prompted me to seek treatment for my child is presently

   - considerably worse   - the same   - slightly improved
   - worse   - improved
   - slightly worse   - greatly improved

2. My child's problems that have been treated during my participation in the project are now

   - considerably worse   - the same   - slightly improved
   - worse   - improved
   - slightly worse   - greatly improved

3. My child's problems that have not been treated during my participation are

   - considerably worse   - the same   - slightly improved
   - worse   - improved
   - slightly worse   - greatly improved

4. My feelings now about my child's progress are that I am

   - very dissatisfied   - neutral   - slightly satisfied
   - dissatisfied   - satisfied
   - slightly dissatisfied   - very satisfied

5. To what degree has the treatment program helped with other general personal or family concerns not directly related to your child?

   - hindered much more than helped   - neither helped nor hindered   - helped slightly
   - hindered   - helped
   - hindered slightly   - helped very much

6. At this time, I believe that the treatment will continue to have a positive outcome.

   - strongly disagree   - neutral   - somewhat agree
   - disagree   - agree
   - somewhat disagree   - strongly agree

7. I feel the approach to treating my child's behavior problems in the home by using this type of conjoint behavioral consultation is

   - very inappropriate   - neutral   - slightly appropriate
   - inappropriate   - appropriate
   - slightly inappropriate   - very appropriate

8. Would you recommend conjoint behavioral consultation to a friend or a relative?

- strongly recommended   - neutral   - slightly not recommended
- recommended   - not recommended
- slightly recommended   - strongly not recommended

9. How confident are you in managing your child's <u>current</u> behavior problems in the home on your own?

- very confident   - neutral   - somewhat unconfident
- confident   - unconfident
- slightly confident   - very unconfident

10. How confident are you in your ability to manage <u>future</u> behavior problems of your child in the home using what you learned from this project?

- very confident   - neutral   - somewhat unconfident
- confident   - unconfident
- slightly confident   - very unconfident

11. My overall feeling about the treatment program for my child and family is

- very negative   -neutral   - slightly positive
- negative   - positive
- slightly negative   - very positive

APPENDIX G

Consultation Services Questionnaire – Teacher Form

TEACHER CONSULTATION SERVICES QUESTIONNAIRE

Thank you for your participation in this consultation project. Your cooperation has been greatly appreciated. The following questionnaire is part of an evaluation of the project. The information obtained will help us evaluate the project; therefore, it is important that you respond as honestly as possible.

Please circle the response that best expresses your feelings.

1. The major problem that originally prompted me to refer the child is presently

    - considerably worse   - the same   - slightly improved
    - worse   - improved
    - slightly worse   - greatly improved

2. The child's problems that have been treated during my participation in the project are now

    - considerably worse   - the same   - slightly improved
    - worse   - improved
    - slightly worse   - greatly improved

3. The child's problems that have not been treated during my participation are

    - considerably worse   - the same   - slightly improved
    - worse   - improved
    - slightly worse   - greatly improved

4. My feelings now about the child's progress are that I am

    - very dissatisfied   - neutral   - slightly satisfied
    - dissatisfied   - satisfied
    - slightly dissatisfied   - very satisfied

5. To what degree has the treatment program helped with other general classroom concerns not directly related to the child?

    - hindered much more than helped   - neither helped nor hindered   - helped slightly
    - hindered   - helped
    - hindered slightly   - helped very much

6. I feel the approach to treating the child's behavior problems in the school by using this type of program is

    - very inappropriate   - neutral   - slightly appropriate
    - inappropriate   - appropriate
    - slightly inappropriate   - very appropriate

7. Would you recommend conjoint behavioral consultation to a colleague?

    - strongly recommended   - neutral   - slightly not recommended
    - recommended   - not recommended
    - slightly recommended   - strongly not recommended

8. How confident are you in managing <u>current</u> behavior problems in the classroom on your own?

- very confident   - neutral   - somewhat unconfident
- confident   - unconfident
- slightly confident   - very unconfident

9. How confident are you in your ability to manage <u>future</u> behavior problems in the classroom using what you learned from this project?

- very confident   - neutral   - somewhat unconfident
- confident   - unconfident
- slightly confident   - very unconfident

10. My overall feeling about the treatment program for the child is

- very negative   - neutral   - slightly positive
- negative   - positive
- slightly negative   - very positive

APPENDIX H

Treatment Evaluation Questionnaire – Parent Form

Treatment Evaluation Questionnaire – Parent

You have just completed an intervention program. Please evaluate the intervention by circling the number which best describes <u>your</u> agreement or disagreement with each statement. Please answer each question.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. This was an acceptable intervention for my child's problem behavior.	1	2	3	4	5	6
2. Most parents would find this intervention appropriate for behavior problems in addition to the one described.	1	2	3	4	5	6
3. The intervention was effective in changing my child's problem behavior.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other parents.	1	2	3	4	5	6
5. My child's behavior problem was severe enough to warrant use of this intervention.	1	2	3	4	5	6
6 Most parents would find this intervention suitable for the behavior problem described.	1	2	3	4	5	6
7. The intervention did <u>not</u> result in negative side-effects for the child.	1	2	3	4	5	6
8. The intervention would be appropriate for a variety children.	1	2	3	4	5	6
9. The intervention was a fair way to handle my child's problem behavior.	1	2	3	4	5	6
10. I liked the procedure used in the intervention.	1	2	3	4	5	6
11. The intervention was a good way to handle my child's behavior problem.	1	2	3	4	5	6
12. Overall, the intervention was beneficial for my child.	1	2	3	4	5	6
13. The intervention quickly improved my child's behavior.	1	2	3	4	5	6
14. The intervention produced a lasting improvement in my child's behavior.	1	2	3	4	5	6
15. The intervention improved my child's behavior to the point that it would not noticeably deviate from other children's behavior.	1	2	3	4	5	6
16. Soon after using the intervention, I noticed a positive change in my child's problem behavior.	1	2	3	4	5	6
17. My child's behavior remained at an improved level even after the intervention was discontinued.	1	2	3	4	5	6
18. Using the intervention not only improved my child's behavior in the home, but also in other settings (e.g., other homes).	1	2	3	4	5	6
19. When comparing my child with a well-behaved peer before and after use of the intervention, my child's and peer's behavior was more alike after using the interventions.	1	2	3	4	5	6
20. The intervention produced enough improvement in my child's behavior so the behavior no longer was a problem.	1	2	3	4	5	6
21. Other behaviors related to the problem behavior	1	2	3	4	5	6

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also were improved by the intervention.

APPENDIX I

Treatment Evaluation Questionnaire – Teacher Form

Treatment Evaluation Questionnaire – Teacher

You have just completed an intervention program. Please evaluate the intervention by circling the number which best describes <u>your</u> agreement or disagreement with each statement. Please answer each question.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. This was an acceptable intervention for the child's problem behavior.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate for behavior problems in addition to the one described.	1	2	3	4	5	6
3. The intervention was effective in changing the child's problem behavior.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The child's behavior problem was severe enough to warrant use of this intervention.	1	2	3	4	5	6
6 Most teachers would find this intervention suitable for the behavior problem described.	1	2	3	4	5	6
7. The intervention did <u>not</u> result in negative side-effects for the child.	1	2	3	4	5	6
8. The intervention would be appropriate for a variety children.	1	2	3	4	5	6
9. The intervention was a fair way to handle the child's problem behavior.	1	2	3	4	5	6
10. I liked the procedure used in the intervention.	1	2	3	4	5	6
11. The intervention was a good way to handle the child's behavior problem.	1	2	3	4	5	6
12. Overall, the intervention was beneficial for the child.	1	2	3	4	5	6
13. The intervention quickly improved the child's behavior.	1	2	3	4	5	6
14. The intervention produced a lasting improvement in the child's behavior.	1	2	3	4	5	6
15. The intervention improved the child's behavior to the point that it would not noticeably deviate from other children's behavior.	1	2	3	4	5	6
16. Soon after using the intervention, I noticed a positive change in the child's problem behavior.	1	2	3	4	5	6
17. The child's behavior remained at an improved level even after the intervention was discontinued.	1	2	3	4	5	6
18. Using the intervention not only improved the child's behavior in the classroom, but also in other settings.	1	2	3	4	5	6
19. When comparing the child with a well- behaved peer before and after use of the intervention, the child's and peer's behavior was more alike after using the interventions.	1	2	3	4	5	6
20. The intervention produced enough improvement in the child's behavior so the behavior no longer was a problem.	1	2	3	4	5	6
21. Other behaviors related to the problem behavior	1	2	3	4	5	6

also were improved by the intervention.

APPENDIX J

Parent Information and Consent

Using Conjoint Behavioral Consultation with Children Who Have Autism: Effectiveness, Acceptability, and Generalization of Skills

Dear Parents:

My name is Stacia L. Blakeman-Angell and I am a School Psychology Ph.D. Candidate at Oklahoma State University. I am interested in studying a consultation model that allows parents and teachers to be involved in addressing behavioral concerns across settings (home and school) in children with autism.

The purpose of this study is to determine if using conjoint behavioral consultation is an effective service delivery model for addressing behavioral concerns in children with autism and to generalize skills (use those skills) across settings to make functioning in those settings easier.

I am interested in studying a consultation model that allows parents and teachers to be involved in addressing behavioral concerns across settings in children with autism. The training will be given at school and at home for approximately 8 weeks. In order for me to measure if your child's behavioral concerns have reduced over this period of time, parents, the special education teacher, and the general education teacher will be required to participate in collecting baseline information (frequency of behavior occurring before the intervention) and implementing the intervention as part of the Conjoint Behavioral Consultation team. At the end of the study, parents will complete a Treatment Evaluation Questionnaire, a Consultation Services Questionnaire, and an Intervention Rating Profile – 15 Questionnaire which will assess the acceptability and effectiveness of the intervention and the Conjoint Behavioral Consultation process.

There are several benefits to the information gained from this study. The effectiveness of the interventions derived from the Conjoint Behavioral Consultation Model offer an alternative intervention for children with autism. The findings may also open up a whole new area of research for interventions for individuals with autism. Using the Conjoint Behavioral Consultation model also allows parents and teachers to be involved in the intervention process as opposed to the current interventions which are offered through direct services. As for psychologists, this consultation model provides an alternate intervention that is not as time consuming as direct service interventions which allows psychologists to serve more children. This study will also benefit children with autism as the interventions derived from the Conjoint Behavioral Consultation Model will help make easier learning new skills in alternative settings.

In order to maintain confidentiality, a data base will be set up using data gathered from this study which will contain teacher, parent, and student names and demographic information, as well as intervention data. This data base will be contained within a password protected program on a non-network drive with access only to the researcher working on this project. Audio and or videotapes will be maintained behind two secured locks and only available to the researcher working on this project. All data will be maintained for approximately one year after the completion of the project for the purposes of write-up.

If any questions or concerns arise, I may contact Stacia L. Blakeman-Angell, a Ph.D. candidate and primary investigator for this dissertation, at (972)219-3892 or Dr. Gary Duhon, the supervisor for this dissertation at 744-9436. For information on subjects' rights, contact Beth McTernan, IRB Administrator, Oklahoma State University, 415 Whitehurst Hall, Stillwater, OK 74078, 405-744-1676.

I understand that participation is voluntary and that I will not be penalized in anyway if I choose not to participate. I also understand that I am free to withdraw my consent and end my participation in this project at anytime without penalty.

Sincerely,

Stacia L. Blakeman-Angell, M.S.

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy of this form has been given to me.

_____	I **agree** to allow my child to participate in the study using a consultation model that allows parents and teachers to be involved in reducing behavioral concerns across settings in children with autism and I agree to complete checklists about my child's behaviors (before, during and after training).

_____	I **do not agree** to allow my child to participate in the study using a consultation model that allows parents and teachers to be involved in reducing behavioral concerns across settings in children with autism.

_____
Child's name (printed)

_____	_____
Parent or Guardian Participant (signature)		Date

I certify that I have personally explained this document before requesting that the participant sign it.

_____	_____
Researcher (signature)		Date

APPENDIX K

Student Information and Assent

Using Conjoint Behavioral Consultation with Children Who Have Autism: Effectiveness, Acceptability, and Generalization of Skills

Dear Student:

My name is Stacia L. Blakeman-Angell and I am a School Psychology Ph.D. Candidate at Oklahoma State University. I am interested in working with parents and teachers to help children at home and school.

I want to see if I can help children learn skills at home and school easier.

I will be working with your parents and teachers for about 8 weeks. Everything we do together will be audio and or videotaped.

To make sure everything is private all information will be put on my computer or locked up where no one will see it but me and I will keep it for one year.

If you have any questions or concerns please call, Stacia L. Blakeman-Angell, Ph.D. candidate and primary investigator for this dissertation, at (972)219-3892 or Dr. Gary Duhon, the supervisor for this dissertation, at 744-9436. For information on subjects' rights, contact Beth McTernan, IRB Administrator, Oklahoma State University, 415 Whitehurst Hall, Stillwater, OK 74078, 405-744-1676.

I understand that I have the choice to participate or not and that nothing will happen to me if I choose not to participate. I may also choose to stop participating at any time without anything happening to me.

Sincerely,

Stacia L. Blakeman-Angell, M.S.

_____

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy of this form has been given to me.

_____ I **agree** to participate in the study.

_____ I **do not agree** to participate in the study.

I have read and fully understand the consent form. As parent or guardian I
authorize_____ (print name) to participate in the described research.

_____   _____
Parent/Guardian Name (printed)   Date

_____   _____
Signature of Parent or Guardian   Date

I certify that I have personally explained this document before requesting that the participant sign it.

_____   _____
Researcher (signature)   Date

APPENDIX L

Teacher Information and Consent

Using Conjoint Behavioral Consultation with Children Who Have Autism: Effectiveness, Acceptability, and Generalization of Skills

Dear Teachers:

My name is Stacia L. Blakeman-Angell and I am a School Psychology Ph.D. Candidate at Oklahoma State University. I am interested in studying a consultation model that allows parents and teachers to be involved in addressing behavioral concerns across settings in children with autism.

The purpose of this study is to determine if using Conjoint Behavioral Consultation is an effective service delivery model for addressing behavioral concerns in children with autism and to generalize skills across settings to make functioning in those settings easier.

I am interested in studying a consultation model that allows parents and teachers to be involved in addressing behavioral concerns across settings in children with autism. The training will be given at school and at home for approximately 8 weeks. In order for me to measure if your student's behavioral concerns have reduced over this period of time, I would like for special and general education teacher's and parents to use a structured Conjoint Behavioral Consultation format of problem identification and analysis, intervention development, treatment implementation, and treatment analysis. Data (e.g., observations, ratings) will be collected and analyzed regarding the effectiveness of the model, intervention effectiveness, acceptability of the intervention, as well as acceptability of the Conjoint Behavioral Consultation model by participants before, during and after the training. To ensure that the integrity of the model is maintained all Conjoint Behavioral Consultation interviews and interventions will be audio and or videotaped.

There are several benefits to the information gained from this study. The effectiveness of the interventions derived from the CBC Model offer an alternative intervention for children with autism. The findings may also open up a whole new area of research for interventions for individuals with autism. Using the CBC model also allows parents and teachers to be involved in the intervention process as opposed to the current interventions which are offered through direct services. As for psychologists, this consultation model provides an alternate intervention that is not as time consuming as direct service interventions which allows psychologists to serve more children. This study will also benefit children with autism as the interventions derived from the CBC Model will help make easier learning new skills in alternative settings.

In order to maintain confidentiality, a data base will be set up using data gathered from this study which will contain teacher, parent, and student names and demographic information, as well as intervention data. This data base will be contained within a password protected program on a non-network drive with access only to the researcher working on this project. Audio and or videotapes will be maintained behind two secured locks and only available to the researcher working on this project. All data will be maintained for approximately one year after the completion of the project for the purposes of write-up.

If any questions or concerns arise, I may contact Stacia L. Blakeman-Angell, a Ph.D. candidate and primary investigator for this dissertation, at (972)219-3892 or Dr. Gary Duhon, the supervisor for this dissertation, at 744-9436. For information on subjects' rights, contact Beth McTernan, IRB Administrator, Oklahoma State University, 415 Whitehurst Hall, Stillwater, OK 74078, 405-744-1676.

I understand that participation is voluntary and that I will not be penalized in anyway if I choose not to participate. I also understand that I am free to withdraw my consent and end my participation in this project at anytime without penalty.

Sincerely,

Stacia L. Blakeman-Angell, M.S.

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy of this form has been given to me.

_____   I **agree** participate in the study using a consultation model that allows parents and teachers to be involved in reducing behavioral concerns across settings in children with autism and I agree to complete checklists about the student's behaviors (before, during and after training).

_____   I **do not agree** to participate in the study using a consultation model that allows parents and teachers to be involved in reducing behavioral concerns across settings in children with autism.

_____
Student's name (printed)

_____   _____
Teacher's Signature   Date

I certify that I have personally explained this document before requesting that the participant sign it.

_____   _____
Researcher (signature)   Date

APPENDIX M

Baseline Data Collection Form

Baseline Data Collection Form

Date:_____

Setting:_____

Operationalized Behavior: _____

_____

_____

Please tally the number of times the operationalized behavior occurs during your class period or homework time at home.

Oklahoma State University Institutional Review Board

Date	Tuesday, January 18, 2005
IRB Application No	ED0550
Proposal Title	Using Conjoint Behavioral Consultation with Children Who Have Autism: Effectiveness, Acceptability, and Generalization of Skills
Reviewed and Processed as:	Expedited (Spec Pop)

Status Recommended by Reviewer(s): Approved   Protocol Expires: 12/12/2005

Principal
Investigator(s

Stacie Blakeman   Gary J Duhon
1532 Garrison Trail   423 Willard
Lewisville, TX 75077   Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.
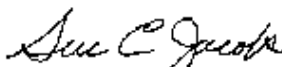
The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research, and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact me in 415 Whitehurst (phone: 405-744-1676, nelson@okstate.edu).

Sincerely,

Sue C. Jacobs, Chair
Institutional Review Board

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VITA

Stacia Lynne Angell

Candidate for the Degree of

Doctor of Philosophy

Dissertation: USING CONJOINT BEHAVIORAL CONSULTATION WITH CHILDREN WHO HAVE AUTISM: EFFECTIVENESS, ACCEPTABILITY, AND GENERALIZATION OF SKILLS

Major Field: School Psychology

Biographical:

   Personal Data: Born in Lexington, Kentucky, on June 18, 1975, the daughter of Charles and Mary Lynn Blakeman. I am married to Jason Lee Angell and we have a son, Trenton Lee Angell.

   Education: Graduated from Lafayette High School, Lexington, Kentucky in June 1993; received Bachelor of Science degree in Psychology from Eastern Kentucky University, Richmond, Kentucky in May 1997; received Master of Science degree in Clinical Psychology from Eastern Kentucky University, Richmond, Kentucky in May 2000. Completed the requirements for the Doctor of Philosophy degree with a major in School Psychology at Oklahoma State University in July, 2005.

   Experience: Teaching assistant at Oklahoma State University; School Psychologist Intern at Lewisville Independent School District in Lewisville, Texas; practicum school psychology student in Union School District in Tulsa, Oklahoma and Oklahoma State University School Psychology Clinic; masters Clinical Psychology internship at Texas MH/MR; practicum student in clinical psychology at Eastern Kentucky University Child and Family Clinic and Developmental Disabilities Specialty Clinic, and Hospice of the Bluegrass.

Name: Stacia Lynne Angell   Date of Degree: July, 2005

Institution: Oklahoma State University   Location: Stillwater, Oklahoma

Title of Study: USING CONJOINT BEHAIVORAL CONSULTATION WITH
                       CHILDREN WHO HAVE AUTISM: EFFECTIVENESS,
                       ACCEPTABILITY, AND GENERALIZATION OF SKILLS

Pages in Study: 183   Candidate for the Degree of Doctor of Philosophy

Major Field: School Psychology

Scope and Method of Study: The conceptual bases of the Conjoint Behavioral
    Consultation (CBC) model suggest potential for positive outcomes when
    used with parents and teachers of children with autism. Thus, the purpose of
    this study was to investigate the effectiveness of CBC in promoting the
    success of elementary and secondary school age children with an IDEA
    eligibility of autism when addressing behavioral excesses in the special
    educational classroom, regular education classroom, and the home. In
    addition, programming the generalization of skills across settings was
    investigated. Lastly, the acceptability of the CBC model and the interventions
    derived from the model were investigated. Participants in the study were 6
    children from an urban school district in the Midwest with an IDEA eligibility
    of autism, their special education teacher, general education teacher, and
    parents. For the six cases in this study, behavioral excesses were identified
    and interventions designed to reduce the overall occurrences of these
    excesses were developed and implemented in the special education
    classroom. A partial form of the full intervention that was implemented in the
    special education classroom (training setting) was implemented in the
    general education classroom and home settings (generalization).
    Programming common stimuli was the method used for generalization
    purposes.

Findings and Conclusions: Based on the data from this study, there is evidence
    that the application of consultation is an effective service delivery model for
    children with   autism. Furthermore, there is evidence that the application of
    the CBC model is an effective service delivery model for children with autism.
    In addition, there is evidence that generalization can be programmed across
    settings to reduce behavioral excesses. Lastly, there is evidence that the
    CBC model, as well as the interventions derived from the model, are
    acceptable to parents and teachers of children with autism.

ADVISOR'S APPROVAL:__Dr. Gary Duhon_____