

THE RELATIONSHIP OF PSYCHOLOGICAL
INTENSITIES TO ATTENTION-DEFICIT/
HYPERACTIVITY DISORDER IN
KINDERGARTEN CHILDREN

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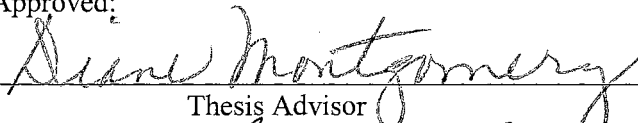
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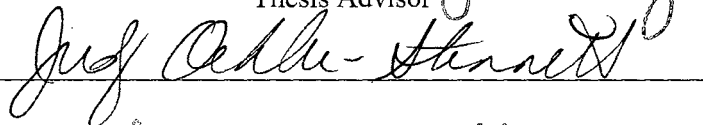
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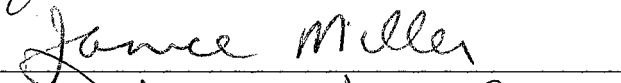
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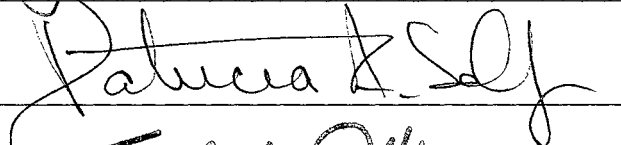
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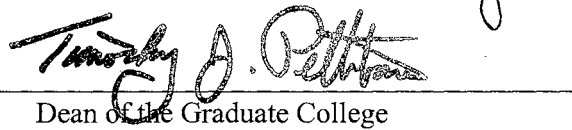


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CHAPTER I

Introduction

In any kindergarten classroom during free play, children who are energetic, active, curious, spontaneous, excitable, and talkative can be seen briefly flitting from one activity or person to another as they explore their environment. Mundane tasks easily bore them, and impulsive responding without much forethought is common, as is lack of self-control when something tempts them. Whether happy, sad, or angry, kindergarteners' emotions are usually transparent. Some degree of these behaviors is developmentally appropriate. However, when children consistently demonstrate activity levels that are far in excess of their peers; when they repeatedly fail to sustain attention, interest, or persistence as well as their classmates do in similar activities, assignments, or longer-term goals; or when their lack of impulse control and self-regulation are significantly delayed for their age; these problematic behaviors interfere with their social, cognitive, academic, emotional, and familial domains of development and adjustment. As more and more demands are placed upon these children, they are at increasing risk for falling substantially behind their classmates (Barkley, 1997).

Diagnosing Attention-Deficit/Hyperactivity Disorder (AD/HD) in preschool children is quite complex and exceedingly difficult (McGoey, Bradley-Klug, Crone, Shelton, & Radcliffe, 2000), underlining the importance of considering developmental context in the diagnostic process. Sorting out a child's behavior, one is asked to ascertain what the difference is between distractibility and perceptiveness, impatience and being compelling, stubbornness and

persistence, being nosy or being curious, hyperactivity and energy, loudness and enthusiasm, unpredictability and creativity, and more. How does one differentiate between the positive descriptors of advanced developmental potential and the negative labels of a disorder or disability? Parents of preschool children generally view their child's behavior as more or less normal, especially in kindergarten where these behaviors are more tolerated. However, when their child's teacher raises concerns about these kinds of behaviors, parents approach a slippery slope which may affect how they view their child in general, and could culminate in a diagnosis—or even misdiagnosis—leading to medication which may or may not be appropriate, or more importantly, may not be in the child's best interest.

An understanding of normal developmental processes can provide a yardstick against which to compare AD/HD as a disorder, to compare how symptoms change at different ages and how personality traits affect one's adjustment, in the context of cognitive, academic, and psychosocial demands at specific developmental stages (Teeter, 1998). In the early years of life, young children formulate theoretical conceptions of how the world works, largely resulting from their own spontaneous interactions with their environment (Gardner, 1993). Of all aspects of human development, perhaps the most illusive is affective growth (Greenspan & Pollock, 1989). While each stage of development has its own special challenges, organizing properties, and unique meanings, relatively recent studies facilitate opportunities to formulate a developmental perspective on affective growth in children (Greenspan & Pollock, 1989). The affective area focuses on self-concept as well as social, emotional, and personality characteristics (Charlesworth, 1992). While it is not within the scope of this work to review child development in general, nor affective growth in particular, an understanding of both provides the necessary framework for comparison of an individual child's behavior to for his or her peers. If AD/HD is the extreme end of a dimensional psychological trait which varies on a continuum in the normal

population, and is developmental in nature, it can vary in its manifestations at different developmental stages (Barkley, 1997).

Background of the Problem

In conjunction with concerns about the rise of childhood depression, violence, and crime, school psychologists have been increasingly involved in various job duties that include consultation, conducting functional behavior and other types of assessments, writing behavior intervention plans, participating in manifestation determinations, serving on Individual Education Plan teams, providing individual and group counseling, serving students with Attention-Deficit/Hyperactivity Disorder, and importantly—helping parents and teachers with referral concerns. A clarification to the 1997 Amendments to the Individuals with Disabilities Education Act specifically explained that AD/HD may be determined to be a disability by a child's school team under the special education categories of Other Health Impaired, Specific Learning Disabilities, or Emotional Disturbance, when the child's educational performance is adversely affected (U.S. Dept. of Education, 1997). A documented growth of 280% over the past decade identifies Other Health Impaired as the fastest growing special education category in this country, presumably attributed to increased numbers of AD/HD diagnoses (U.S. Department of Education, 1999). If not meeting eligibility criteria under these IDEA categories, a child with AD/HD may be considered for 504 services under the Rehabilitation Act of 1974 (Office for Civil Rights, 1993). In making such determinations, best practice recommends obtaining information about multiple traits utilizing multiple methods from multiple sources, including the parents, classroom teacher, and support personnel who are knowledgeable about and trained to understand and identify attention problems, such as the school psychologist (National Association of School Psychologists, 2002).

Recently there has been a sharp increase in the diagnosis of Attention-Deficit/Hyperactivity Disorder, leading some to wonder about its over-diagnosis, due to its popularity in the media. In the United States, approximately 3-5% of elementary students are diagnosed with this disorder, with boys outnumbering girls at about a 2:1 to 5:1 ratio (American Psychiatric Association, 1994; Barkley, 1998). The marked increase in prescriptions for Ritalin as well as other stimulant and psychotropic drugs has received national attention. Although the *Diagnostic and Statistical Manual of Mental Disorders—(4th ed.)—Text Revised (DSM-IV-TR) (2000)* spells out the diagnostic criteria for Attention-Deficit/ Hyperactivity Disorder, it does not establish a gold standard, or precise diagnostic protocol, for assessment of this disorder, and fails to account for important changes in attention and hyperactivity-impulsivity that occur during the course of development (Power & DuPaul, 1996). This has fostered diagnostic ambiguity, especially in young preschool and early school-age children.

Compared to the normal population, children with AD/HD are at high risk for academic and social failure in school settings (Barkley, 1990). Up to 80% of students with AD/HD exhibit academic performance problems, resulting in lower than expected rates of work completion (Cantwell & Baker, 1991). Children who were rated high in AD/HD characteristics were between five and six times more likely than normal children to be rated as having significant deficits in social skills (Merrell & Wolfe, 1998). Of AD/HD children, 30 to 50% are retained in a grade at least once, 46% are suspended at least once, 11% are expelled, 10 to 35% never complete a high school education, and only 5% complete college (Barkley, Fischer, Edelbrock, & Smallish, 1990; Weiss & Hechtman, 1993). Further, there is high comorbidity of AD/HD with other externalizing disorders—conduct disorder and oppositional defiant disorder (Webster-Stratton, 1993).

Theoretical Framework for the Study

Unlike previous theories, literature on AD/HD now provides evidence that this is not a disorder of attention, but rather of behavioral inhibition, executive functions, and self-regulation (Barkley, 1997). Behavioral inhibition is the basis upon which the other executive functions—nonverbal working memory, verbal working memory, self-emoting, and reconstitution—depend, and these control the last component—motor control/fluency/syntax. Barkley (1997) distinguishes between two kinds of sustained attention: externally controlled (context-dependent/contingency-shaped) and internally guided (rule-governed/goal-directed). Thus, children with AD/HD have an inability to appropriately regulate the application of attention to tasks that are not intrinsically rewarding and/or that require effort, which comprise the majority of typical schoolwork, even in programs for gifted students (Kaufman, Kalbfleisch, & Castellanos, 2000).

A possible alternative explanation (for some individuals) regarding hyperactivity and attention problems, Dabrowski's evolving theory of emotional development and developmental potential of individuals offers a different paradigm. Dabrowski noted that some persons overreacted to both external and intrapsychic stimuli on a consistent basis (Hague, 1976). Proposing that individuals with advanced developmental potential had increased psychic excitabilities, that might predict extraordinary achievement, Dabrowski in his Theory of Positive Disintegration (TPD) explains qualitative differences of general human development (Nelson, 1989).

Dabrowski's concept of multilevelness flows through his five dimensions of mental functioning, based on his clinical observation of increased overexcitability. Hierarchically from lowest to highest, these overexcitabilities, also called psychological intensities, include (1) Psychomotor, (2) Sensual, (3) Imaginational, (4) Intellectual, and (5) Emotional. Giving the

emotional the most importance shows TPD's emphasis on psychology's need to rediscover emotional development after years of focus on physiological and cognitive development (Hague, 1976). Of particular interest is the description of psychomotor overexcitability: excess of energy, love of movement for its own sake, rapid speech, intense physical activities, impulsiveness, restlessness, action, drivenness, active and energetic (Piechowski & Colangelo, 1984, p. 81). These phrases sound quite similar to those commonly associated with Attention Deficit/Hyperactivity Disorder. Even descriptions of characteristics of gifted children suggest that their unique psychological traits may affect their behavior negatively (Lewis, Kitano, & Lynch, 1992). An important distinction that may be helpful in distinguishing psychological intensities of advanced developmental potential from AD/HD behaviors is that the former involves goal-directed, future-oriented, adaptive behaviors while the latter tends to include more non-goal-directed and maladaptive behaviors.

Whether diagnosed with AD/HD or not, children with inattentive and hyperactive-impulsive behaviors need effective strategies for managing behavior and enhancing academic performance in school. Often these children are bright, even gifted, but have school problems that may or may not be identified as learning disabled (Vail, 1987). Referrals for attention disorders among gifted children have been growing at a surprising rate (Webb & Latimer, 1993). Many gifted students demonstrate AD/HD-like behaviors, which could be psychological intensities associated with high intelligence, or these may be the result of a school environment where bright children are expected to conform to a boring, sluggish curriculum (Baum, Olenchak, & Owen, 1998), or other reasons. Lovecky (1999) found "that the dual exceptionality of being both gifted and AD/HD often means that such children are not recognized as having either exceptionality, and thus, their needs for an appropriate education are not met" (p.1). Thus, it is important that school psychologists have expertise about both giftedness and AD/HD in order to make differential diagnoses, rather than wrong diagnoses.

Statement of the Problem

According to the *Diagnostic and Statistical Manual of Mental Disorders—(4th ed.)—Text Revised (DSM-IV-TR)*; (2000), children with Attention-Deficit/ Hyperactivity Disorder have problems sustaining situation-appropriate attention, which can include problems with hyperactivity, alertness, arousal, impulsivity, academic difficulties, motor skills, and distractibility. AD/HD is viewed as an inability to inhibit responding, with consequent deficits in self regulation and self monitoring of behavior (Lovecky, 1999). Some have theorized that these problems are exacerbated by tasks that are dull, repetitive, and boring (Barkley, 1990). Students with AD/HD often fail to complete assignments, exhibit disruptive behavior in class, and have difficulty relating to their peers. Most of these children have learning deficits in spelling, math, reading, and handwriting (Barkley, 1990).

These students are at higher risk of developing conduct disorders, dropping out of school, becoming involved in juvenile crime, being suspended or expelled, and repeating a grade (Barkley et al, 1990; Weiss & Hechtman, 1993). School is typically the most problematic environment for children with AD/HD (DuPaul, Stoner, Tilly, & Putman, 1991), where school-based consultation is especially important.

Whether at school, home, or in the community, the behaviors associated with AD/HD are generally viewed negatively by adults. This negative bias, then, can taint the adult's opinion of these children, blinding them from seeing any positive attributes they may have. For example, a very bright student, who is bored and not completing his assignments, may not be referred by the teacher for an evaluation that would open the door to a gifted program that might otherwise be available to the student. A parent of a very hyperactive child could develop a negative response set in dealing with this child who tries the parent's patience and is difficult to deal with in public places with the family, and thus restrict the child from activities with family and friends; this

cycle would further contribute to the lack of appropriate social skills of which the child is already deficient.

If the indicators of AD/HD are related to the psychological intensities, or overexcitabilities, of Dabrowski's Theory of Positive Disintegration, there would be important implications for early identification and targeted interventions for these children. If these are related, then knowing which psychological intensities are linked to which AD/HD indicators would provide even more specific information with which to plan interventions. In older children, many more boys than girls are diagnosed with AD/HD; finding out if this difference is constant across the developmental progression of AD/HD or not would have important implications for parents and educators about their perceptions of these students, as well as when to intervene for preventive measures to avoid growth of more serious sequelae.

Significance of the Study

Early intervention screenings and services are offered for certain children from birth to three years of age, who have moderate to severe disabilities, by such programs as Sooner Start in Oklahoma. By the child's third birthday, they are then transitioned into the public schools, for continuation of services. From age three on, the public schools provide preschool screenings and services, the most common being for speech-language therapy. Prior to entry into school, many school districts offer kindergarten screenings. Except for those already identified and receiving special services, most kindergarten children are generally regarded as normal. Generally, giftedness, AD/HD, or other mild to moderate disorders remain undiagnosed at this beginning point in their school careers.

Although Dabrowski's theory was not originally linked to studies of the gifted until much later in his career, it is just beginning to be tied to research concerning children with

Attention Deficit/ Hyperactivity Disorder. This theory may offer a different lens through which to examine this much studied disorder. If, as Barkley theorizes, AD/HD is a disorder of disinhibition, then some children with AD/HD may be more likely to have one or more overexcitabilities, or psychological intensities.

Very little research has been done to compare these two theories. Even less research has targeted the kindergarten population for studying characteristics of advanced developmental potential and Attention-Deficit/Hyperactivity Disorder, or to compare gender differences within these characteristics at this developmental stage. This study will not only contribute to the literature for this age group, where there is currently a void, but also add much needed information to assist school psychologists and other educators in making more accurate differential diagnoses, especially for children who have characteristics of AD/HD and who are intellectually bright.

By providing valuable insight, awareness, and a better understanding of the early developmental progression of Attention Deficit/Hyperactivity Disorder and psychological intensities of young children, this study offers a positive conceptual paradigm with which to reframe these associated behaviors that have been traditionally regarded as problematic. This research may provide evidence against inappropriately medicating these children with psychological intensities, which may stifle their creativity and emerging personalities. Instead of waiting until they have encountered months or even years of frustration and often failure, a knowledge-based preventative approach could help these children receive better interventions that are more developmentally appropriate, specifically targeted, and provided at the critical beginning of their school experience. Thus, there would be a higher probability of positively influencing their lives, and of offsetting the troublesome trajectory that otherwise would often occur for these children.

Purpose of the Study

This study examines the relationship between Dabrowski's psychological intensities and Attention Deficit/Hyperactivity Disorder for the kindergarten population. As theorized by Dabrowski, and interpreted for adults by Piechowski (1979,1986) and others including Kitano (Lewis, Kitano & Lynch, 1992), psychological intensities (also called overexcitabilities) have been defined and measured by the Parent Questionnaire that she developed for preschoolers. For Kitano's instrument, factor analysis revealed the following factors: I. Emotional Sensitivity, II. Imaginational Sensitivity, III. Intellectual Precocity, IV. Critical Attitude, V. Intellectual Intensity, VI. Psychomotor Intensity, and VII. Task Commitment. For the kindergarten population, Attention Deficit/Hyperactivity Disorder (AD/HD) can be measured with the ADHD Comprehensive Teacher's Rating Scale (ACTeRS) Parent Form, published by Metritech (Ullmann, Sleator, & Sprague, 1997). There are five subscales: Attention, Hyperactivity, Social Skills, Oppositional Behavior, and Early Childhood. Both measures are determined by parent report. By comparing the data from these two parent questionnaires, this study will examine the relationship between characteristics of giftedness and AD/HD, as well as gender differences if any, as perceived by parents of kindergarten students. Thus, it will provide much needed data at this developmental age, where currently there is a dearth of information in these areas.

Research Questions

In order to study the relationship between psychological intensities and indicators of AD/HD, two questionnaires completed by the same parent will be compared. The Kitano instrument assesses parent perceptions of psychological intensities in the child, and the ACTeRS

assesses indicators of Attention-Deficit/Hyperactivity Disorder. This study will investigate the following questions:

1. What is the relationship between psychological intensities as defined by Kitano's factors (Emotional Sensitivity, Imaginational Sensitivity, Intellectual Precocity, Critical Attitude, Intellectual Intensity, Psychomotor Intensity, and Task Commitment) and the indicators of Attention-Deficit/Hyperactivity Disorder as measured by the ACTeRS (Attention, Hyperactivity, Social Skills, Oppositional Behavior, and Early Childhood) for kindergarteners?
2. Is parent perception of psychological intensities as measured by the Kitano Parent Questionnaire similar for kindergarten boys and girls?
3. Is parent perception of indicators of Attention-Deficit/Hyperactivity as measured by the ACTeRS similar for boys and girls?
4. Which Kitano factors significantly predict parent perception of Hyperactivity? The null hypothesis for this question states that Hyperactivity is not a function of the Kitano factors.
5. Which Kitano factors significantly predict parent perception of Attention? The null hypothesis for this question states that Attention is not a function of the Kitano factors.

Definition of Terms

Regarding the major constructs of the two theories relevant to this study, there are some terminology that warrant definition for clarification purposes. Psychological intensities, or overexcitabilities, were originally conceptualized in the context of advanced developmental

potential. Although Attention-Deficit/Hyperactivity Disorder may be more commonly known, it is important to define it in terms of Barkley's theory as applied to this research.

Psychological intensities, also known as the concept of overexcitabilities (Dabrowski, 1964), are described as:

an expanded and intensified manner of experiencing in the psychomotor, sensual, intellectual, imaginal, and emotional areas...As personal traits, overexcitabilities are often not valued socially. Being viewed instead as nervousness, hyperactivity, neurotic temperament, excessive emotionality, and emotional intensity that most people find uncomfortable at close range (Piechowski & Colangelo, 1984, p. 81).

Of particular interest is the description of psychomotor overexcitability: an organic excess of energy or excitability of the neuromuscular system. It may manifest itself as a love of movement for its own sake, rapid speech, pursuit of intense physical activities, impulsiveness, restlessness, pressure for action, drivenness, the capacity for being active and energetic (p. 81).

Preferring the term psychological intensities, Kitano (1990) in her preliminary Parent Questionnaire for preschoolers identified the following factors: Factor I, Nonconformity, includes items related to individuality, preoccupation with abstract ideas, criticism of others, and a feeling of being different from peers. Factor II, Perfectionism, consists of items involving a high sensitivity to criticism from others, seeking recognition for own accomplishments, frustration when own performance does not meet self-imposed standards, and refusal to participate in activities in which the child cannot be the best. Factor III, called Intellectual Excitability, includes items related to advanced cognitive development, independence from the group, impatience with waiting for others, a serious approach, good recall, and need for recognition of abilities. Factor IV, Emotional Hypersensitivity, consists of items related to

empathy, concern about the feelings of self and others, and a sense of justice. Factor V, consists of Psychomotor Intensity, which is based on items related to high levels of activity, energy, and sensitivity to changes; Imaginational Intensity, which is composed of items describing active fantasy life, sensitivity to separation, and nonconformity; and Sensual Intensity, composed of items related to sensitivity to odors, colors, noises, and/or changes in lighting or temperature. However, actual factor analysis found these factors, which will be used for the purpose of this study: Factor I. Emotional Sensitivity, Factor II. Imaginational Sensitivity, Factor III. Intellectual Precocity, Factor IV. Critical Attitude, Factor V. Intellectual Intensity, Factor VI. Psychomotor Intensity, and Factor VII. Task Commitment.

Attention-Deficit/Hyperactivity Disorder (AD/HD) for this thesis refers to two of the three main subtypes of AD/HD: attention-deficit/hyperactivity disorder: combined type and attention-deficit/hyperactivity disorder, predominantly hyperactive-impulsive type. Because Barkley's theoretical model does not apply to attention-deficit/hyperactivity disorder: predominantly inattentive type, it will not be addressed in this discussion.

CHAPTER II

Review of the Literature

The purpose of this study is to examine the relationship of psychological intensities to Attention-Deficit/Hyperactivity Disorder for the kindergarten population. This chapter will first explain psychological intensities in terms of Dabrowski's theory of Positive Disintegration. Historical background, theoretical constructs, and current applications of this theory, including Kitano's adaptation for preschoolers, will be discussed. Then an overview and historical background of Attention-Deficit/Hyperactivity Disorder will be given, followed by a discussion of Russell Barkley's theory of AD/HD, and related contemporary issues. Lastly, Dabrowski's theory will be meshed with Attention-Deficit/ Hyperactivity Disorder.

Dabrowski's Theory of Positive Disintegration

Combined with his training in psychology, psychoanalysis, and experimental psychology, Dabrowski's work experience in child psychiatry and later at a psychiatric institution uniquely prepared him to conceptualize such a theory. In developing his Theory of Positive Disintegration (TPD), Dabrowski applied some constructs from Hughlings Jackson's work to personality development.

Historical Background of the Theory of Positive Disintegration

In 1964, the first English translation from Polish of Kazimierz Dabrowski's theory of Positive Disintegration was published. Dabrowski was a professor in the Polish Academy of Science and the Director of the Institute of Children's Psychiatry and Mental Hygiene in the Academy. He was born in 1902 in Lublin, Poland, and received his M.D. at the University of Geneva Medical School in 1929, studying psychology and education in Geneva in 1928 and 1929, with Edouard Claparede and Jean Piaget. He had psychoanalytic training and analysis in 1930 in Vienna, Austria, under Wilhem Stekel, with additional training in clinical psychology and psychiatry in Boston and in Paris under George Heuyer at Vaugirard in 1931; he attended the lectures of Pierre Janet in Claude. He earned a Ph. D. in experimental psychology from the University of Pozan in 1932. From 1933 to 1934, he studied in Boston under Macfie Campbell, Director of the Boston Psychopathic Hospital, and William Healy, the first Director of the Judge Baker Foundation. In 1934, he was a Privat Docent in child psychiatry at the University of Geneva. Except for the disruption of the German occupation of Poland, Dabrowski was the Director of the Polish State Mental Hygiene Institute and High School for Mental Hygiene in Warsaw, which had been organized with the assistance of the Rockefeller Foundation, from 1935 to 1948.

With this comprehensive background and rich experiences in clinical psychology and child psychiatry, Dabrowski developed his theory. The roots of Dabrowski's Theory of Positive Disintegration are drawn from the concepts of evolutionary development of the central nervous system of Hughlings Jackson, the English neurologist, to the concept growth of the Polish psychiatrist Mazurkiewicz, and to the Swiss psychologist Jean Piaget's work in child development (Dabrowski, 1964).

Hughlings Jackson's concepts of evolutionary development, hierarchical levels, and dissolution of the central nervous system were expanded into psychiatry by Henry Ely in France, Von Monakow in Switzerland, and Jan Mazurkiewicz in Poland. Ely applied these concepts to normal individuals. Von Monakow added to Jackson's theories many additional concepts including *klisis* (movement toward objects), *ekklisis* (movement away from objects), and *syneidesis* (biological synthetic power in humans and animals). Von Monakow's emphasis has been on the interpretation of psychiatric symptoms via changes over time (Dabrowski, 1964).

A neo-Jacksonist and outstanding Pavlovian psychiatrist, Mazurkiewicz emphasized qualitative developmental changes in the nervous system and the significance of emotions as directing forces. He came to believe that in synapses, the thalamic area, and especially the frontal lobes, nervous system activity is quantitatively and qualitatively transformed. He viewed instincts and emotions as directing forces in animals and human beings as well as being involved in Pavlov's conditioned reflexes (Dabrowski, 1964).

Director of the Institute of the Science of Education (Jean Jacques Rousseau Institute) in Geneva, Jean Piaget has been primarily concerned with developmental psychology and with the influence of social environment on child development, which he regards as a gradual unfolding of abilities in the child. Piaget emphasizes many forms and states of development—prelogical, logical, mathematical, and other kinds of thinking (Dabrowski, 1964).

Extending Jackson's theory of evolutionary development of the central nervous system to the personality's psychological development, Dabrowski combines Mazurkiewicz' emphasis on self-determination with Piaget's views of the progressive developmental unfolding of abilities. However, Dabrowski emphasizes the positive function of conflict, anxiety, and psychopathological symptoms.

In 1937 in his study *Psychological Bases of Self-Mutilation*, Dabrowski first outlined some of the key ideas of the theory of positive disintegration. Here he presented the *factors*

which cause a disharmony of mental structures and functions and stimulate the development towards a new integration (Dabrowski, 1970, p.1). Initially presented in 1946 in his paper *Psychic Integration and Disintegration*, the theory of positive disintegration was further unified with the idea of mental health envisioned as the capacity for positive development through the processes of positive disintegration, in the paper *The Concept of Mental Health* (Dabrowski, 1970).

After 1948 in a series of papers, mainly in *Annals Medico-Psychologiques*, published in Polish, French, and English, Dabrowski continued to formulate the concepts of the dynamisms of the inner psychic milieu. He focused mostly on the third factor, disposing and directing center, feelings of guilt, inferiority feeling toward oneself and the ideal of personality. Published in Polish in 1964, his main work, *Positive Disintegration*, represents a most exhaustive discussion of the theory. Also in Polish, the extensive study, *Mental Hygiene*, published in 1962, discusses his formulation of the concept of personality and the methods of its realization through the process of positive disintegration (Dabrowski, 1970). Subsequently, Dabrowski moved to the University of Alberta, Canada, in 1964; after which two systematic presentations of his theory of positive disintegration in English were published by Little, Brown, and Co., Boston: *Positive Disintegration* in 1964 and *Personality-shaping Through Positive Disintegration* in 1967.

Dabrowski's view of personality development is called the "theory of positive disintegration." Disintegration is defined as "disharmony within the individual and in his adaptation to the external environment" (Dabrowski, 1964, p. xiv). Its symptoms include anxiety, psychoneurosis, and psychosis. Generally disintegration refers to involution, psychopathology, and retrogression to a lower level of psychic functioning. Its opposite is integration: evolution, psychic health, and adequate adaption, both within the self and to the environment. Dabrowski postulated a developmental instinct: a tendency of man to evolve from lower to higher levels of personality. Personality primarily develops through dissatisfaction with, and fragmentation of,

the existing psychic structure—a period of disintegration—and finally resulting in a secondary integration at a higher level. Previous disintegration is necessary for growth to take place. Symptoms of anxiety, psychoneurosis, and even some symptoms of psychosis are regarded by Dabrowski as signs of the disintegration state of this evolution and thus not always pathological. Slight psychiatric disorders are seen as necessary for personality development (Dabrowski, 1964).

Dabrowski described human personality as it actually expressed itself, especially in eminent persons and in the developmental process from “what is” to “what ought to be” (Nelson, 1989). Evolutionary rather than ontogenetic, Dabrowski conceptualized a distinct system that defines truly measurable developmental parameters (Hague, 1976). The term positive disintegration refers to a developmental process whereby simpler and less mature lower level structures composing the personality break down so that reintegration of more complex and advanced structures may occur at higher levels (Nelson, 1989). Multilevelness of developmental phenomena is a central concept, with the level of behavioral organization a function of development. The emotional forces that delineate the levels of developmental transformations are called dynamisms to indicate their dynamic potency to promote development. The underlying principle that provides continuity between the levels is developmental potential (Nelson, 1989).

Regarding the general theory of positive disintegration, Dabrowski presents the concept of the instinct of development, and describes the processes of positive disintegration and secondary integration. In contrast to negative disintegration, the individual in positive disintegration has a high level of intelligence and creativity. During periods of developmental crisis or of extreme stress, symptoms arise. However, rather than narrow symptoms which do not arouse the individual’s concern, both insight and a capacity for emotional closeness occur, involving the whole person with a balance of retrospection and prospection (Dabrowski, 1964).

Dabrowski describes the self as a hierarchy of levels with the possibility of conflict (the feeling of inferiority toward oneself), which he regards as generally playing a positive role in personality development. The development of self—self-awareness, self-control, and self-criticism—are considered by Dabrowski as important in development as the influence of heredity and environment. Because he views the developed self as largely independent of these other two factors, he describes it as a third factor (Dabrowski, 1964).

Dabrowski's theoretical framework provides an explanation of a broad range of data, including empirical data, everyday observations, and clinical experiences. First evidence from psychological evaluation of normal Warsaw school children whom teachers judged to be well adapted and above average in intelligence showed that about 80 percent had different symptoms of nervousness and slight neurosis such as mild anxiety, phobias, inhibitions, slight tics, and various forms of overexcitability (Dabrowski, 1964). Thus, psychiatric symptoms are common in children who have a high potential for development. Second, during normal development, greatest personality growth occurs during times of greatest psychological upheaval, such as puberty, showing that anxiety and nervousness can be accompanied by accelerated development (Dabrowski, 1964). Third, in producing psychological crises, severe environmental stress may contribute to creativity and growth, actually precipitating development. Lastly, the positive correlation between creativity and different states of disintegration is seen in highly creative persons' periods of psychological disharmony related to their creativity (Dabrowski, 1964).

The earliest study of overexcitabilities in the gifted was done by Dabrowski in Warsaw in 1962 (Dabrowski, 1964). He noted that some individuals, from children to adults, consistently overreact to both external and intrapsychic stimuli in characteristic ways of releasing tension and responding to stimulation. This overreacting seemed limited to certain dimensions, which Dabrowski called the five overexcitabilities: psychomotor, sensual, imagination, intellectual, and emotional. The term overexcitability is a translation of the Polish term *nadpobudliwosc* which

literally means superstimulatability in the neurological sense— stronger neurological reactions to stimuli. Like Gardner's multiple intelligences (Gardner, 1993), the five overexcitabilities are innate strengths which are considered to be variables of temperament (Heflinger & Nixon, 1996). These relate most closely to temperament qualities of activity level, intensity of reaction, and threshold of responsiveness (Gottfried & Gottfried, 1994; Thomas, Chess, & Birch, 1968; Silverman, 1998).

Dabrowski's concept of multilevelness flows through his five dimensions of mental functioning, based on his clinical observation of increased overexcitability. Hierarchically from lowest to highest, from more commonly seen to less, these include (1) Psychomotor, (2) Sensual, (3) Imaginational, (4) Intellectual, and (5) Emotional. Like channels bringing stimuli into the individual, overexcitabilities affect people in different ways. Some individuals appear to be more sensitive to one type of stimulus; others are to a broad assortment of stimuli, ranging from lower psychomotor levels to higher levels more closely associated with cortical functioning (Hague, 1976). Giving the emotional the most importance shows TPD's emphasis on psychology's need to rediscover emotional development after years of focus on physiological and cognitive development (Hague, 1976).

The concept of overexcitabilities, or psychological intensities, is described as:
 an expanded and intensified manner of experiencing in the psychomotor,
 sensual, intellectual, imaginational, and emotional areas...As personal traits,
 overexcitabilities are often not valued socially. Being viewed instead as
 nervousness, hyperactivity, neurotic temperament, excessive emotionality, and
 emotional intensity that most people find uncomfortable at close range
 (Piechowski & Colangelo, 1984, p. 81).

In *Social-Educational Child Psychiatry*, published in Poland in 1959 and revised in 1964, Dabrowski provided the fullest treatment of the five forms of psychic overexcitability,

discussing clinical and educational implications of overexcitabilities as well as challenges in raising a child prone to high levels of stimulation (Piechowski & Miller, 1995).

Dabrowski emphasized the disequilibrating, disorganizing, and disintegrating action of overexcitabilities on various areas of psychological functioning. Overexcitability was defined by the following characteristics: 1) a reaction that exceeds the stimulus, 2) a reaction that lasts much longer than average, 3) the reaction often not being related to the stimulus (e.g., a fantasy image in response to an intellectual stimulus, and 4) a ready relaying of emotional experience to the sympathetic nervous system (fast beating of the heart, flushing, perspiring, headaches) (translated and cited by Piechowski, 1995, p.3)

Only when excitation is beyond normal does it contribute to developmental potential and qualify as an overexcitability (Piechowski, 1979). The psychomotor overexcitability is defined as a surplus of energy or expression of emotional tension “through general hyperactivity” (Dabrowski, with Kawczak & Piechowski, 1970, p- 31). Manifestations include excess physical energy, workaholism, nervous habits (such as tics, nailbiting), rapid speed, love of movement, impulsivity, and pressure for action (Piechowski, 1979). The sensual overexcitability means a responsiveness of the senses, aesthetic appreciation, sensualism, and enjoyment at being the center of attention. The imaginal overexcitability is the capacity to visualize events very well, inventiveness, creativity, fantasy, and poetic, dramatic, or artistic abilities. This is the basis for development of prospection and retrospection—i.e., the ability to use one’s past experience in planning the future (Dabrowski, with Kawczak & Piechowski, 1970, p. 31). The intellectual overexcitability is characterized by probing questions, analytical thinking, reflectiveness, problem solving, interest in abstraction and theory. This overexcitability seems to be most closely associated with intellectual giftedness. The emotional overexcitability is defined as intense connectedness with others, the ability to experience things deeply, fears of death, embarrassment, and guilt, and responsiveness (Silverman, 1998)

In 1979 Piechowski introduced gifted education to the five overexcitabilities as a method of assessing creative potential, noting, “the overexcitabilities may be regarded as the actual psychological potential of the creative person” (Piechowski, 1979, p. 49). He hypothesized that the strength of the overexcitabilities can be used as a measure of a person’s giftedness. Characteristics which are often associated with giftedness, such as perfectionism, nonconformity, feelings of being different, an idealistic sense of justice, emotional intensity, social isolation, and oversensitivities, may be regarded as potentially promoting adjustment problems (Kitano, 1990b). To remove the negative connotation of problem characteristics and overexcitabilities, Margie Kitano in her work with young children, suggested referring to these qualities as psychological intensities (Kitano, 1990a). Although typically expressed in more socialized forms such as verbal mediation, gifted children’s behavior includes aggression, competition, and conflicts (Abroms, 1983).

Attention-Deficit Hyperactivity Disorder

History contains literary references to individuals with marked deficits of attention, hyperactivity, and poor impulse control. Even one of Shakespeare’s characters in *King Henry VIII* had a malady of attention. In the poem *Fidgety Phil*, by the German physician Heinrich Hoffman in the mid-1800s, a hyperactive child is described (Stewart, 1970). In his *Principles of Psychology*, William James (1890) described the explosive will, a normal character variant that resembles today’s ADHD characteristics.

In this century, this syndrome first appears in Strauss and Lehtinen’s (1947) *Psychopathology and Education of the Brain-Injured Child*. Certain children having at least average ability, received the diagnosis of Strauss’ Syndrome, or minimal brain damage, if they displayed the following characteristics: a) erratic and inappropriate behavior on mild

provocation; b) increased motor activity; c) poor organization of behavior; d) distractibility of more than ordinary degree under ordinary conditions; e) persistent faulty perceptions; f) persistent hyperactivity; and g) awkwardness and consistently poor motor performance (Stevens & Birch, 1957).

Because of being so difficult to substantiate, the brain injury-behavior link was de-emphasized in the 1970s in favor of the Hyperactive Child Syndrome. However, by the early 1980s, the role of hyperactivity became secondary to the primary symptom of one's ability to sustain attention and control impulses (Baum, Olenchak, & Owen, 1998). Thus, two terms emerged to describe these individuals as having either Attention Deficit Disorder (ADD) with Hyperactivity or ADD without Hyperactivity (American Psychiatric Association, 1980). Returning to an earlier focus, today's term for this spectrum of behaviors is Attention-Deficit/Hyperactivity Disorder (ADHD). Primary symptoms of ADHD include hyperactivity, inattention, and poor impulse control. While some children clearly demonstrate ADHD without hyperactivity, researchers argue that this Inattentive type may be a completely different disorder (Carlson, 1986).

By whatever name it has been called, those who work with children with attention problems easily conceptualize this disorder. Historically, it has been known as brain damage syndrome, minimal brain dysfunction, hyperkinetic reaction to childhood (i.e., hyperactivity), attention deficit disorder (with and without hyperactivity; ADD), and attention-deficit hyperactivity disorder (Landau & Burcham, 1995). The changing nomenclature does, at least represent an improved understanding of children with ADHD (Schaughency & Rothlind, 1991).

Described as a neurobehavioral syndrome, AD/HD is characterized by persistent patterns of inattention and hyperactivity/impulsivity (American Psychiatric Association, 2000), that is more severe and more frequently displayed than in other children at a comparable level of development. AD/HD requires for diagnosis that its symptoms must be present before age seven

years, for six months or more, and to a degree that is maladaptive and inconsistent with the person's developmental level; occurring in two or more settings; and must have clear evidence of a significant negative impact on the child's social, academic, or occupational functioning.

Exclusions include Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder, and that the symptom pattern is not better accounted for by another mental disorder (e.g., Mood Disorder, Anxiety Disorder, Dissociative Disorder, or Personality Disorder. The *DSM-IV-TR* cites three subtypes of AD/HD: attention-deficit/hyperactivity disorder: combined type, attention-deficit/hyperactivity disorder: predominantly inattentive type, and attention-deficit/hyperactivity disorder, predominantly hyperactive-impulsive type. There are two additional possible diagnostic terminologies: Cautioning one to examine the predominant symptom pattern for the past six months, the *DSM-IV-TR* notes that if an individual previously but no longer meets criteria for AD/HD, then the appropriate diagnosis is Attention-Deficit/Hyperactivity Disorder, In Partial Remission. However, if the child's symptom array does not currently meet full criteria for AD/HD and it is unclear whether this standard was previously met, the diagnosis should be Attention-Deficit/Hyperactivity Disorder Not Otherwise Specified.

The *DSM-IV-TR* symptoms associated with Inattention, across situations, may include often failing to give close attention to details or making careless mistakes in schoolwork or other tasks, often having difficulty sustaining attention in tasks or play and having difficulty in persisting with tasks until completion, performing work in careless and messy form with little considered thought, or appearing as if their mind is wandering or they are not listening or not hearing what is said. They may often shift from one activity to another without completing tasks, and often lack follow through on requests or instructions and fail to complete schoolwork, chores, or other duties. However, the latter should only be considered as diagnostic criteria if it is due to inattention as opposed to other possible reasons (e.g., oppositionality, failure to

understand instructions, etc.). Organizing tasks and activities is frequently challenging. These students typically avoid or strongly dislike tasks requiring sustained mental effort, organizational demands, or close concentration, and are experienced as aversive and unpleasant. One is cautioned that this avoidance must be due to difficulties in attention, and not primarily to oppositionality. Work habits are typically disorganized and materials scattered, lost, or carelessly handled or damaged by these students, who are easily distracted. They are commonly forgetful. Socially inattention is manifested in shifting conversations readily, failure to listen to others, not attending to conversations, and not following rules or details of games or activities.

Hyperactivity is characterized by fidgetiness, squirming, out of seat behavior, excessive running or inappropriate climbing, difficulty with quiet activities, being often “on the go” or “driven by a motor” or excessive talking. The *DSM-IV-TR* further cautions that this diagnosis should be made carefully in young children, because hyperactivity may vary with one’s age and developmental level. Toddlers and preschoolers with AD/HD differ from normally active young children in the above ways with more intensity and frequency than their peers.

Impulsivity includes impatience, poor delay of responses, blurting out, difficulty awaiting one’s turn, and excessive interrupting or intruding on others as to cause impairments in social, academic, or occupational settings. They may grab objects from others, touch things without permission, clown around, etc. They may be more prone to accidents and to participate in potentially dangerous activities without consideration of possible consequences.

In regard to attentional and behavioral manifestations, the *DSM-IV-TR* notes that although some impairment must be present in at least two settings, it is quite unusual for a child to display the same level of dysfunction in all settings or within the same setting at all times. Situations that require sustained attention or mental effort or that are boring, unappealing, or lack novelty may foster worsening of symptoms, which may decrease or disappear when the student is receiving frequent rewards for behavior, is closely supervised, is in a novel setting, is

especially interested in activities, or is receiving attention in a one-to-one situation. However, symptoms are likely to increase in group situations. Thus, information should be gathered across settings from multiple raters. About 30-60% of children with AD/HD also have other behavior disorders, such as conduct disorder or oppositional defiant disorder (Barkley, 1998).

While the DSM-IV-TR provides a diagnostic system which may help facilitate communication among professionals, delineate risk factors, and identify children needing specialized interventions such as stimulant medication and contingency management procedures, it also has its limitations. Emphasizing the medical model rather than the education model required of schools by the Individuals with Disabilities Education Act, the DSM-IV-TR characterizes AD/HD as psychopathology within the child rather than examining environmental variables, such as the quality of instruction or classroom management, and their role in maintaining or causing the behaviors of concern. Labeling a child with a psychiatric disorder may have a potentially devastating effect not only on the child's self-esteem and/or emotional well-being, but on the parent's perception of the child and how the child is disciplined (or not). The psychological effects of receiving a diagnosis of AD/HD are unknown and potentially important (Power & DuPaul, 1996). Other concerns include the DSM-IV-TR's lack of clarity in differentiating among the subtypes of AD/HD regarding degree of impairment, related behavior or learning problems, or long-term outcome, especially for AD/HD Predominantly Hyperactive-Impulsive (HI) Type. In the DSM-IV-TR field trials, the largest group identified as having the HI Type were preschoolers (Lahey, Miller, Gordon, & Riley, 1999). This diagnostic system also fails to recognize developmental changes in the expression of AD/HD across the life span, and the required age of onset criterion is not currently empirically supported. Further, it fails to establish assessment guidelines, including sources of evaluation data, settings of interest, recommended assessment instruments, or procedures for determining symptom severity. Guidelines for diagnostic decision-making when comorbid conditions occur are lacking. The

diagnosis of AD/HD itself lacks treatment utility for planning instructional and behavioral interventions (Power & DuPaul, 1996).

The spectrum of behaviors for AD/HD tend to covary within individuals, and can also be associated with several other learning, behavioral, or emotional problems including mental illnesses. These same behaviors predict chronic disturbance in adaptive functioning across settings (Power & DuPaul, 1996).

Most cognitive impairments are included within the neuropsychology domain of executive functions (Denckla, 1994; Torgeson, 1994) or the developmental psychology domain of metacognition (Flavell, 1970; Torgeson, 1994). All these skills are considered to be mediated by the frontal cortex, specifically the prefrontal lobes (Fuster, 1989, 1995; Stuss & Benson, 1986). Problems in the development or functioning of these areas of the brain appear to be the source of AD/HD (Barkley, 1997).

AD/HD has a high heritability rate, as research in family, adoption, and twin studies have demonstrated. In fact, heredity is one of the most well-substantiated etiologies for AD/HD (Barkley, 1997). Environmental factors also play a much less significant role. Environmental causal factors include prenatal exposure to drugs of abuse, alcohol, or maternal smoking; premature birth, head injury, lead toxicity, or rare endocrine abnormalities (Kaufmann, Kalbfleisch, & Castellanos, 2000). The mean prevalence estimate across all AD/HD definitions and all types of studies in boys and girls combined is 2% (Lahey et al, 1999).

Although many treatments have been used for AD/HD, research has mainly focused on the efficacy of only two—medications and psychosocial interventions (Christophersen & Mortweet, 2001). Other treatments, including dietary management, herbal and homeopathic treatments, biofeedback, meditation, perceptual stimulation, and more; have not withstood its scrutiny. While it is not the purpose of this study to investigate interventions and treatments for AD/HD, it is worth noting that there has been a significant increase in the overall use of

psychotropic medications with children, especially with preschoolers (Zito, Safer, dosReis, Gardner, Boles, & Lynch, 2000).

Barkley's Theory of AD/HD

Currently AD/HD is generally considered as having two major symptoms: inattention and hyperactive-impulsive behavior (or disinhibition). While debate continues over these core deficits, inattention is usually viewed as most likely a deficit in focused or selective attention and the speed of information processing, which is linked more to internalizing than to externalizing disorders (Barkley, 1990; Barkley et al., 1992; Goodyear & Hynd, 1992; Hinshaw, 1994; Lahey & Carlson, 1992). Barkley (1997) argues that it is not clear that AD/HD, Predominantly Inattentive Type is in reality subtype of AD/HD, sharing a common attention deficit with the other types. He maintains that it is unclear whether AD/HD, Predominantly Hyperactive-Impulsive Type is actually a separate type from AD/HD Combined Type or if it is an earlier developmental stage of the same disorder. Research has found that the hyperactive-impulsive symptoms appear first, then within a few years, inattention also occurs, causing the Combined Type to have a later age of onset than the Hyperactive-Impulsive Type (Barkley, 1997). Instead of addressing this primarily inattentive type of attention disorder, Barkley's theoretical model applies chiefly to those individuals having hyperactive-impulsive behaviors, whether inattention has yet arisen in them or not. In fact, this raises the question of whether or not significant inattention is necessary to diagnose AD/HD at all. The inattention symptomology is more associated with poor school performance and possibly reading difficulties, and may actually be comprised of two kinds: one associated with poor selective attention, passivity, and sluggish information processing, and the other having poor resistance to distraction and persistence of effort. It is the hyperactivity which is more predictive of negative adolescent

outcomes, and is more predictive of eventual comorbidity with oppositional defiant disorder and conduct disorder, as well as other antisocial acts (Fischer, Barkley, Fletcher, & Smallish, 1993; Weiss & Hechtman, 1993). According to Barkley (1997, p.3), “AD/HD represents a developmental disorder of behavioral inhibition that interferes with self-regulation and the organization of behavior toward the future.”

Although the ACTeRS Parent Scale was not based on Barkley’s theory, it is quite helpful in diagnosing AD/HD. For the kindergarten population, Barkley would expect that hyperactive-impulsive behaviors would be the strongest indicator of AD/HD, which would be assessed by the ACTeRS Hyperactivity subscale. The other subscales would be useful in looking at the behavioral disinhibition that interferes with self-regulation and organizing behavior toward the future: Social Skills, Oppositional Behavior, and Early Childhood. Barkley would place the least emphasis on the Attention subscale, contrary to the ACTeRS manual. Generally a score in the lower quartile should be considered indicative of a major deficit, while those from 25 to 40 percentile suggest a moderate problem, with clusters of scores more helpful in providing a more complete picture of the child’s problem than a single score (Ullmann, Sleator, & Sprague, 1997).

Inattentive symptomology in children with AD/HD is more stable across childhood than is that of hyperactive-impulsive behavior, which declines markedly with age (Hart, Lahey, Loeber, Applegate & Frick, 1995). Currently AD/HD is being defined largely by its hyperactivity, one of its earliest symptoms, and one of its later secondary manifestations—goal-directed persistence, and only minimally by its chief feature—behavioral inhibition and self-regulation (Barkley, 1997). Because of these developmental variations, Barkley and Biederman (in press) recommend that the age of onset threshold be broadened to at least 13 years of age, while eliminating the current arbitrary age threshold of seven years.

The prevalence of AD/HD subtypes was found to be approximately 85% or more having AD/HD with Hyperactivity-Impulsivity (either AD/HD Combined or AD/HD Hyperactive-

Impulsive) in childhood. However, in adolescence, AD/HD Predominantly Inattentive Type was more common. There seem to be more males in all subtypes compared to females (Szatmari, 1992).

Central to Barkley's theory is the assumption that "the essential impairment in AD/HD is a deficit involving response inhibition" (Barkley, 1997, p. 47). This leads to related impairments in four neuropsychological abilities that depend in part upon inhibition to work efficiently. The end result leads to less effectiveness in motor (behavioral) control or in self-guidance by internally represented information and self-directed action.

Three entwined abilities comprise behavioral inhibition: 1) to inhibit prepotent response patterns prior to performing them, 2) to interrupt or inhibit ongoing response patterns, and 3) to resist distraction and protect the response delay and self-directed executive functions occurring within the delay, from interference by other external and internal events (Barkley, 1997). This creates a delay in which the other executive functions can occur. Forms of self-directed action for the performance of self-regulation are the executive functions, which contribute to the capacity for self-regulation and future-oriented, goal-directed behavior. Self-control involves 1) temporal delays between events, responses, and/or outcomes in a behavioral contingency; 2) a conflict or difference between valences of immediate and delayed response outcomes; or 3) the necessity to generate novel responses in problem-solving situations. Barkley (1997) further distinguishes these executive functions into four separate dimensions: behavioral inhibition, working memory, behavioral fluency/flexibility (reconstitution), and persistence of responding and effort (self-regulation of motivation/arousal). In older children, working memory can be subdivided into nonverbal and verbal working memory; however, in preschool children, research shows that it has not yet differentiated, since speech has not yet become fully internalized (Mariani & Barkley, 1997).

The first component in Barkley's (1997) model is behavioral inhibition, which is essential to the proficiency of the executive functions. Upon this key component, depend four executive functions: 1) nonverbal working memory, 2) verbal working memory/internalization of speech, 3) self-regulation of affect/motivation/arousal, and 4) reconstitution. These all interact, working together to allow self-control to anticipate change and the future, so as to maximize the long-term benefits for the individual. The ability to reactivate past sensory events and prolong them during a delay in responding comprises hindsight (Bronowski, 1977). When one's pertinent past history is recalled to inform response selection to an event and to help direct that eventual response in the future, it is retrospective function (Fuster, 1989). Out of hindsight or retrospective function arises forethought, of the prospective function (Bronowski, 1977). This allows anticipation of a hypothetical future for which to prepare, or anticipatory set (Fuster, 1989). Referencing the past in order to inform and regulate present behavior to prepare for future events helps self-awareness (Kopp, 1982). The ability to retain a sequence of events in working memory gives a sense of time (Bronowski, 1977). Thus, hindsight and forethought create a window on time (past, present, future) of which one is aware (Barkley, 1997). When language becomes internalized, it is turned on the self to inform, influence, and control one's own behavior; hence, it becomes rule-governed behavior (Hayes, Gifford & Ruckstuhl, 1996).

The affect/motivation/arousal component of Barkley's (1997) model includes: 1) self-regulation of affect, 2) a capacity for objectivity and social perspective, 3) self-regulation of drive and motivational states, and 4) self-regulation of arousal. These subfunctions all work towards goal-directed actions.

To summarize, Barkley's (1997) hybrid model of executive functions consists of six components. Behavioral inhibition is the foundation on which the other four executive functions depend. These four functions include 1) covert, self-directed sensing/nonverbal working memory; 2) covert, self-directed speech/verbal working memory; 3) covert, self-directed

affect/motivation/arousal/, or emoting to oneself; and 4) covert, self-directed behavioral manipulation experimentation, and play/ reconstitution. The last component is motor control/fluency/syntax, which is controlled by the others. Developmentally, human self-control results from “the unfolding maturation of the neural structures of the prefrontal cortex that subserve it” (Barkley, 1997, p.233).

According to Barkley, AD/HD is caused by a deficiency in the behavioral inhibition system. Barkley’s theoretical model predicts that AD/HD (1) interrupts the capacity for working or representational memory and the power of resensing information to oneself, (2) delays development of the internalization of speech and self-control which depends upon this process, (3) impairs one’s psychological sense of time especially in regulating one’s own behavior, (4) disrupts internal representation of information as well as the capacity to recall that information in goal-directed behavior and its cross-temporal organization, (5) diminishes one’s capacity for emoting and motivating to oneself as it is future-driven, (6) impairs the capacity to imitate or replicate others’ complex sequences of behavior, (7) results in more externalized than internalized behavior than normal, and (8) interferes with goal-directed persistence, volition, and free will (Barkley, 1997, p. ix). Barkley (1997) makes a critical distinction between two forms of sustained attention: context-dependent/contingency-shaped (externally controlled) and rule-governed/goal-directed (internally guided).

Linking Dabrowski’s Theory with AD/HD

Research is beginning to be done in the intersection of AD/HD and giftedness, where complex interplays occur among the various characteristics of both, as well as creativity, other behavioral and personality traits, and the demands of learning, social, and other environments (Baum, Olenchak, & Owen, 1998). Underserved and understimulated, gifted children with

disabilities often demonstrate a marked discrepancy between their measured academic potential and their actual academic performance (Cline, 1999; Whitmore & Maker, 1985). Of concern is the surprising increase in referrals for AD/HD among gifted students (Gordon, 1990; Webb & Latimer, 1993).

When examining deficits in attention, concentration, task persistence, organization of thinking, focusing attention, and impulse control, as well as hyperactivity, careful consideration must be given to many factors. For example, the constellation of behaviors commonly associated with AD/HD may possibly be the result of an environment where bright but disinterested children are expected to conform to a dull and boring curriculum. The cause of some of the mislabeled behavior is inappropriate classroom environment (Lind & Silverman, 1994). Here a child may be misdiagnosed with AD/HD when the child is actually gifted and responding to an inappropriate curriculum (Willard-Holt, 1999), or simply energetic. The pervasiveness of externalizing behaviors is the diagnostic key to distinguishing between the two; the student's behavior is more likely associated with giftedness if the behavior is specific to certain situations; however, if the behavior is generally consistent across situations, then it is more likely related to AD/HD (Willard-Holt, 1999). A gifted child's behavior is generally more goal-directed and adaptive, while a child with AD/HD usually manifests non-goal-directed and maladaptive behavior.

Just as serious are diagnostic errors of omission, which may be even more prevalent among gifted children (Kaufman et al, 2000). For example, some gifted children who can concentrate for a long time in areas of interest may not be regarded as AD/HD when in actuality, they are (Lovecky, 1999). Complicating the matter even further is the lack of clear definitions for these constructs, medication issues, and a dearth of appropriate knowledge and strategies for those children and youth who are both gifted and AD/HD. Thus, there are many inherent difficulties in identifying gifted children who have AD/HD (Flint, 2001). Although there are

certainly individual cases of mistaken diagnosis, it is interesting to note that Kaufman et al (2000) could find no empirical data in the medical, educational, or psychological literature to substantiate the extent of this concern.

In certain children, AD/HD can decrease some standardized test scores enough that giftedness may not be readily identified using this traditional approach, especially in older students who have experienced years of failure (Lovecky, 1999). On standardized tests of intelligence and achievement which are traditionally utilized for identification of the gifted, the dually exceptional child who also has AD/HD shows greater inter- and intra-test variability. Missing easier items and answering much more difficult items, these youngsters have much greater scatter, with performance often ranging from average to very superior. Those highly gifted children, especially the mathematically gifted, may score highest in Wechsler Arithmetic and Digit Span subtests; therefore, the WISC-III Freedom from Distractibility factor may not reflect their problems with sequential processing unless identified in nonnumerical subtests such as Picture Arrangement or other measures of sequencing. Thus, exclusive use of the Wechsler tests to identify AD/HD patterns may miss many gifted children (Lovecky & Silverman, 1998).

More adept at metacognitive and rapid learning, gifted students with AD/HD are likely deficient in most executive function skills that are the supporting work skills necessary for school success, such as organization, note-taking, outlining, and writing skills. Although they often know metacognitive strategies, they often forget to use them efficiently, which causes variability across tasks and time. Lovecky (1999) found that these children demonstrate greater asynchrony than peers across all areas of development, especially in emotional sensitivity. More difficulty is seen with self-control and self-monitoring of behavior, inhibiting action, predicting cause and effect in social situations, and judging situations for their salient features, which are missed by children who scan too quickly and miss relevant stimuli.

The most important diagnostic significance must be given to the degree of impairment a child experiences as a result of AD/HD. Even if a child's behavior seems similar to traits commonly associated with giftedness or creativity (Cramond, 1995) or to overexcitabilities (Piechowski, 1991; Silverman, 1993), the child who is impaired in academic, social, or self-concept deserves to be examined clinically to rule out potentially treatable conditions, such as asthma, allergies, or sleep difficulties

The increase in hyperactivity and attention problems in gifted children can be better understood through the evolving theory of emotional development and developmental potential of gifted individuals (Dabrowski & Piechowski, 1977; Olenchak, 1994; Piechowski, 1991; Piechowski & Colangelo, 1984; Silverman, 1993). Explaining qualitative differences in human development, Dabrowski's theory of positive disintegration describes increased psychic excitabilities of individuals with advanced developmental potential, that predicted extraordinary achievement (Nelson, 1989). Piechowski and Colangelo's (1984) concept of psychomotor overexcitability parallels that of hyperactivity. However, Barkley (1997) explains that AD/HD is a disorder of inhibition, the absence of which may result in reckless behavior, poor impulse control, and an inability to delay gratification, which interacts with the environment.

Because no research in this area currently exists, intuitively comparing Kitano's intensity factors to the ACTeRS subscales, Emotional Sensitivity corresponds closely to the ACTeRS Social Skills subtest, where both relate to empathy, concern about the feelings of self and others, and a sense of justice. Kitano's Imaginational Intensity matches best with Oppositional Behavior, in that both involve nonconformity and sensitivity to separation, which may relate on a lesser note to Intellectual Precocity, which includes independence from the group and impatience with waiting for others. Critical Attitude may be more related to Social Skills, because it includes criticizing and questioning others. Intellectual Intensity seems closest to Attention on the ACTeRS, including a serious approach and good recall. Psychomotor Intensity,

which involves activity, energy, and sensitivity to changes, matches best with Hyperactivity. Task Commitment, which includes attention to detail, persistence, and attention span, seems linked to the ACTeRS Attention subscale. Because data is lacking, this study investigated these relationships.

A possible alternative explanation (for some individuals) in regard to hyperactivity and attention problems in children, Dabrowski's evolving theory of emotional development and developmental potential of individuals offers a different paradigm. Rather than expecting abnormal scores in a normal population, especially in kindergarten, in this study we expect to find undiagnosed children, so that these behaviors might be reframed to positive attributes that, related to Barkley's disinhibition, may in actuality be psychological intensities which are indicative of advanced developmental potential. Additionally, this study will explore any causal relationships that psychological intensities may have on indicators of AD/HD.

Research addressing both these theories is scant, and to examine these constructs in the kindergarten population is even more rare. This study will contribute to the literature which compares psychological intensities to indicators of AD/HD at this developmental age.

CHAPTER III

Method

The purpose of this study was to examine the relationship between psychological intensities, as defined by Kitano for the preschool population, and attention-deficit/hyperactivity disorder in kindergarten children. This chapter reviews the study variables, describes participant selection, study procedures, and research instruments.

Participants

The participants were parents (one rater per child) of 60 kindergarten students from six different elementary schools within the same suburban area in central Oklahoma. The six elementary schools generally bordered each other and were roughly of similar socioeconomic status. These students were in the normal population of regular kindergarten classes. No prior screening was done by the researcher for giftedness or any disabilities including Attention-Deficit/Hyperactivity Disorder. Of the 60 students, the breakdown by gender was 26 females and 34 males. Socioeconomic status ranged generally from lower middle class to upper middle class. This school district had a current total enrollment of approximately sixteen thousand (16,000) students. Demographic data obtained by parent report in marking the ethnicity of the child, yielded the following ethnic composition of the sample (See Table 1):

Table 1

Ethnic Composition of Sample

Ethnicity of Child	Number of Subjects	Percent of Sample
White/Other	47	78.2
African American	8	13.3
Hispanic	3	5.0
Native American	1	1.7
Asian	1	1.7
Total	60	100.0

All parents (over 200) of kindergarten students in six elementary schools within this school district were invited to participate in the study by school-home note. At a parent meeting held in conjunction with another school activity at their child's school, the researcher explained the research project, as well as all confidentiality issues and required IRB information, to the group. For consistency, the same outline for procedure and instructions (See Appendix A) to the participants was used, and only the researcher (e.g., no assistants), conducted the research project. After informed consent (See Appendix B) was obtained, parents (one rater per child) who volunteered to participate were asked to encode certain demographic data on the cover sheet (See Appendix C), and then to complete two questionnaires about their kindergarten child. Upon completion of these three documents, which took approximately 20 to 30 minutes, the parent was given a packet of developmentally appropriate parent handouts, and a ticket for a door prize drawing for a parenting book for parents of kindergarten children. There was no direct contact between the researcher and the kindergarten children.

Although all parents of kindergarten students at each selected school were invited, only parents who volunteered participated in the study. Also, sampling occurred in selected schools within the same school district. Thus, the sample was not randomized.

Research Instruments

There were two instruments used to assess the questions posed by this research. Both were completed by parent report (single rater). These particular parent ratings were chosen because of their relationship to the research questions, ease of use for the rater, scoring facility, relative brevity, and developmental appropriateness.

The ADHD Comprehensive Teacher's Rating Scale (ACTeRS)—Parent Rating

The *ADHD Comprehensive Teacher's Rating Scale (ACTeRS)* (Ullmann, Sleator, & Sprague, 1997) enables the researcher to evaluate Attention-Deficit/Hyperactivity Disorder in students from kindergarten through eighth grade from input provided by primary observers of the child's behavior. For the purposes of this study, only the ACTeRS Parent Form was utilized (although there are also both Teacher Forms and Self-Report Forms available). Parents can help improve diagnostic accuracy by providing history about early childhood behavior and reporting on situations to which teachers usually have limited or no access. According to the manual (Ullmann, Sleator, & Sprague, 1996), the ACTeRS measures were designed to a) emphasize attention appropriately, b) be clinically useful for diagnosis of AD/HD and monitoring effects of treatment, and c) identify individual behavior differences in children who manifest a deficit in attention, both prior to and during treatment. Each parent or guardian completed the 25-item instrument by rating the child's observable behaviors on a five-point scale, the response choices ranging from Almost Always to Almost Never. These answers comprise five factors: Attention, Hyperactivity, Social Skills, Oppositional Behavior, and Early Childhood. The ACTeRS was selected for this research project because of its high internal consistency (averaging .86 across the subtests), high test-retest reliability, factor-pure items, and good interrater agreement.

Originally the ACTeRS Teacher Form was pilot-tested on 891 children in 1979. The prototype version consisted of 43 behavioral items that were randomly arranged. A second normative sample of 1339 children ranging from kindergarten through fifth grade was completed. Subjected to a principal components factor analysis, correlations pointed to a four-factor solution that was subsequently rotated to oblique simple structure using the Oblimin method (Ullman et al, 1997). By eliminating items that loaded .33 or higher on more than one factor, factor loadings for the remaining items ranged from .52 to .91. The resulting rating scale is short and practical, while being factor pure by accepted standards. This factor purity allows sharp differentiation among AD/HD's behavioral dimensions. Subsequently, after further testing, items were grouped by type of behavior for the rater's convenience. Beginning with group interviews of parents of children with attention-deficit/hyperactivity disorder, the ACTeRS Parent Form was developed with parents reviewing original ACTeRS items, discussing their relevance in that context, and suggesting additional content to supplement the items in a parent form. Thus, the prototype form added nine new items, focusing on early childhood behavior—an important new dimension—to the original 24 items, which were considered relevant to retain or adapt for the field test. In order to improve parents' focus on target behaviors and increase the quality of their reporting, more context was provided. With this expanded prototype version, 892 children were rated by their parents. These included 478 AD/HD-diagnosed children and 414 were undiagnosed children. Statistical analyses included factor analysis of correlations among the items. The factor purity of the original Teacher Form was retained in the Parent Form. In addition to factor analysis, an item-level discriminant analysis calculated each item's ability to differentiate AD/HD-diagnosed children from non-diagnosed children (Ullman, Sleator, & Sprague, 1997). Using both approaches, 25 items were retained, five for each of the five scales. In addition to the original ACTeRS scales—Attention, Hyperactivity, Social Skills, and Oppositional Behavior—analytic evidence pointed to the inclusion of a fifth scale—Early

Childhood, factorially distinct from the other four scales. Factor pattern values, factor structure values, and factor intercorrelations for the five scales were calculated. Reflecting the contribution of each factor to the variable, the pattern values show a very clean, simple structure. Every item has at least .30 loading on its intended factor, and in only three cases does an item lead more than .30 on an unintended factor. Those items that were factorially complex were eliminated.

Reliability coefficients for the ACTeRS Parent Form subscales ranged from .78 for Early Childhood to .96 for Attention. Validity rests on the relationship between its scales and those of the Teacher Form as well as on its ability to distinguish between children who have been diagnosed with attention disorder and those who have not. Differences between the two groups are highly significant.

Regarding norms, Andrich's Item Response Theory rating scale model was chosen as appropriate to handle ACTeRS multilevel item scores, which range from one to five. Teacher Form data was calibrated on 2362 ratings. The item and step difficulty values from these calibration runs were applied to corresponding items in the Parent Form. These analyses showed the correspondence between raw and true scores on each scale. Raw scores corresponding to equal true scores were presumed to be equivalent. Post-equating smoothing techniques reduced slight irregularities in the equivalence tables. However, because the Early Childhood scale does not appear in the Teacher Form, no equating was possible. Instead, actual distribution of scores on the E scale served as the basis for developing the percentile norms. Because ratings for diagnosed children tended to be oversampled, a subsample of the ratings was drawn that better matched the composition of ratings in the Teacher Form norms (Ullmann, Sleator, & Sprague, 1997).

Validation studies have shown that the ACTeRS consistently showed significant mean differences between AD/HD children, learning disabled children, and normal children, with the

biggest difference on Hyperactivity, as would be expected (Douglas, 1980; Peoples, 1989). The ACTeRS can also be used on a regular basis to monitor intervention effects.

The parent or guardian rates each ACTeRS item from one (almost never) to five (almost always). On the Parent Form, most of the 25 items offer additional descriptors to assist parents in quantifying their child's behavior. The rater circles one number for each item that most closely describes their child's behavior

Two ACTeRS scales are worded positively: Attention and Social Skills, meaning that the higher the raw score, the more appropriate the child's behavior. The other three scales are worded negatively: Hyperactivity, Oppositional Behavior, and Early Childhood; the higher the raw score on these scales, the less desirable the behavior. However, for interpretation purposes, it is important to note that the profile forms automatically make the adjustment, so that higher T-scores reflect desirable directions on each subscale, while lower T-scores represent problem directions (Ullmann, Sleator, & Sprague, 1997).

Kitano's Parent Questionnaire (KPQ)

The second instrument was Kitano's Parent Questionnaire (Kitano, 1990a). The 40-item questionnaire was designed based on characteristics identified by Clark (1983) and Dabrowski (Piechowski, 1979) as concomitant with giftedness and potentially problematic (Kitano, 1990a). Using a 5-point Likert scale from (1) Almost Never to (5) Almost Always or Don't Know, parents were asked to rate their kindergarten child on each item. A measure of the child's level of intensity is obtained by dividing the total score by the number of items rated. Some items were adapted to be aligned with Dabrowski's descriptions of intellectual, sensual, and psychomotor overexcitabilities as applied to young children. Conceptually, overexcitabilities differ from temperamental characteristics (Kitano, 1990a).

Derived from a principal factor model with both orthogonal and oblique rotations, intensity factor scores (Kitano, 1990a) were obtained. Requiring factors to account for at least five percent of the overall variance supported a seven-factor model which seemed to have the best fit with the initially conceived framework. Only those questionnaires which were 90% or more completed were scored. Factor scores were derived by averaging parent ratings on individual items that had loadings greater than 0.40. The orthogonal and oblique rotations produced nearly identical results (Kitano, 1990a). Factor names were derived from items with the highest loadings in each cluster. The factors include: Factor I, Emotional Sensitivity, relates to empathy, concern about the feelings of self and others, and a sense of justice. Factor II, Imaginational Intensity, is associated with active fantasy life, sensitivity to separation, and nonconformity. Factor III, called Intellectual Precocity, includes items related to advanced cognitive development, independence from the group, and impatience with waiting for others. Factor IV, Critical Attitude, includes criticizing and questioning others and persistence in pursuing ideas. Factor V, consists of Intellectual Intensity, which is based on items related to a serious approach, good recall, and a need for recognition. Factor VI, Psychomotor Intensity, included items on high levels of activity, energy, and a sensitivity to changes. Task Commitment is Factor VII, which included attention to detail, persistence, enthusiasm, and attention span. In Kitano's study, scores for the total questionnaire, Intellectual Precocity, Psychomotor Intensity, and Task Commitment correlated negatively with chronological age; t-tests found no significant differences between girls and boys on the Parent Questionnaire total score or any of the factor scores (Kitano, 1990a). Findings from her study included the possibility that gifted children, like unselected children, constitute a psychologically heterogeneous group, and that some exhibit intensities, which include nonconformity, impatience, persistence, serious demeanor, need for recognition, and preoccupation with abstract ideas. Kitano specifically granted her permission for her *Parent Questionnaire* to be utilized for this study.

Because reliability studies had not been done for the KPQ, Chronach's Alpha reliability coefficients for the Kitano Total Score and the seven subscales were analyzed for the present study:

Table 2

Chronbach's Alpha Reliability Coefficients for Kitano Total Score and Subscales

<u>Scale</u>	<u>Number of Items</u>	<u>Chronbach's Alpha</u>
Total	40	.87
Emotional Sensitivity	8	.71
Imaginational Sensitivity	5	.42
Intellectual Precocity	5	.52
Critical Attitude	5	.55
Intellectual Intensity	4	.66
Psychomotor Intensity	3	.66
<u>Task Commitment</u>	4	<u>-.15</u>

Chronbach's Alpha is an internal consistency reliability coefficient that is obtained by averaging all possible split-half internal consistency reliability coefficients. With 40 items comprising the Total score, a value as large as .87 is quite good for this kind of instrument. Because the Emotional Sensitivity scale has only eight items, the Alpha of .71 was smaller, a respectable internal consistency reliability coefficient for this few items. For the Imaginational Sensitivity scale, there were only five items, resulting in a much lower Alpha. The Intellectual Precocity scale has five items, but the Alpha value was higher, suggesting more internal consistency reliability. The Critical Attitude scale has five items, but its Alpha of .55 was larger than the two previous five-item scales. Surprisingly, although the Intellectual Intensity scale had only four items, its internal consistency reliability was higher than any of the five-item scales with a value of .66. The Psychomotor Intensity scale, having only three items, had an equally

respectable internal consistency reliability coefficient of .66. With only four items, the Task Commitment scale presented with a very poor Alpha of -.15, showing little evidence of internal consistency reliability in this scale for these 60 students.

Procedure

Parents of kindergarten students were initially invited to participate in this study by school-home notes inviting them to attend an informational meeting to be held in conjunction with another function at their child's elementary school. Some schools, such as School RC and School BA, hosted the research project as a part of Kindergarten Parents' Night; School SE hosted the research project before Kindergarten Graduation, and the other schools hosted the research project in conjunction with Open House. As a group, parents were fully informed of the purpose of the research project, their rights to participate or not participate in it, and the task and time involved (the amount of time to sign the Parent Permission form, (See Appendix B), complete the Cover Sheet on which certain demographic data, (See Appendix C), was encoded, and complete the two questionnaires—the 40-item Kitano Parent Questionnaire and the 25-item ACTeRS Parent Form). They were assured that, because certain demographic information would initially be encoded by them at the outset, further identifying information would therefore not be available to the researcher; thus, confidentiality would be maintained. Volunteers were then asked to sign the Parent Consent Form, of which the parent was given a copy with IRB information and how to contact the researcher, and to complete the two questionnaires—the ADHD Comprehensive Teacher's Rating Scale (ACTeRS) Parent Form (copyright protected) and the Kitano Parent Questionnaire (See Appendix D).

By counter-ordering the two questionnaires in order to avoid possible negative effects, half the participants were given packet with the ACTeRS first and half the participants were

given packets with Kitano's Parent Questionnaire first, coded as Packet A or B respectively. After completion of the Parent Consent Form and both questionnaires, each participant was given a packet of informational handouts about general developmentally appropriate parent-child topics including AD/HD, as well as a ticket for a door prize drawing for a parenting book. In addition, each participating parent was informed that, although individual results would not be available, they could request information from the researcher about the general findings of the research project at its conclusion; these results would be made available through the office at each participating site.

Research Analyses

To explore the relationship between psychological intensities and indicators of Attention-Deficit/Hyperactivity Disorder, and test the hypotheses, bivariate correlations were calculated. The bivariates assessed the degree of relatedness between each of the Kitano variables—Emotional Sensitivity, Imaginational Sensitivity, Intellectual Precocity, Critical Attitude, Intellectual Intensity, Psychomotor Intensity, and Task Commitment, plus the Total Score, and the five parent perception variables for AD/HD: Attention, Hyperactivity, Social Skills, Oppositional Behavior, and Early Childhood. Independent samples t-tests were applied to analyze gender differences on both instruments. A multiple regression analysis was conducted to determine the extent to which (1) the Kitano factors were predictive of parent perception of Hyperactivity, and (2) the Kitano factors were predictive of parent perception of Attention.

CHAPTER IV

The purpose of this study was to examine the relationship of psychological intensities as interpreted by Kitano for kindergarten children to indicators of Attention-Deficit/Hyperactivity Disorder as measured by the ACTeRS Parent Form. Parents of sixty kindergarten students from six elementary schools within the same school district completed both questionnaires.

Results

This chapter discusses the results of the statistical analyses for the hypotheses tested in this study. The hypotheses sought to examine the relationship between the variables of psychological intensities (Emotional Sensitivity, Imaginational Intensity, Intellectual Precocity, Critical Attitude, Intellectual Intensity, Psychomotor Intensity, and Task Commitment.) with indicators of AD/HD as assessed by the ACTeRS Parent Form (Attention, Hyperactivity, Social Skills, Oppositional Behavior, and Early Childhood). Other research questions examined gender differences as they related to psychological intensities and indicators of AD/HD, and the predictions.

Following a review of the descriptive statistics of the results from the Kitano Parent Questionnaire (Kitano, 1990a) and the ACTeRS Parent Form (Ullmann, Sleator, & Sprague, 1997), the research questions have been addressed. Null hypotheses were developed for each of the research questions. The null hypothesis for Question One was evaluated using an eight by five bivariate correlation matrix for the sample of 60 subjects. The null hypothesis for Question

Two was tested using independent t-tests for boys and girls analyzed separately for parent perceptions of the psychological intensities. The null hypothesis for Question Three was addressed by examining the t-tests for boys and girls analyzed separately for parent perceptions of indicators of Attention-Deficit/Hyperactivity Disorder. The null hypotheses for Questions Four and Five were evaluated using a multiple regression analysis, where (4) Hyperactivity was not anticipated to be functionally related to the Kitano factors, and (5) Attention was not a function of the Kitano factors.

Descriptive Statistics

Although over 200 parents were invited to participate in this study, complete data sets were obtained for only 60 children, 34 male and 26 female, ranging in age from 4.96 years to 6.98 years, with a mean of 6.05 years and a standard deviation of .53 years (See Table 3). The racial breakdown of this sample was 47 (78.3%) White/other, eight (13.3%) African American, three (5.0%) Hispanic, one (1.7%) Native American, and one (1.7%) Asian (see Table 1). Sixty-five percent of these children had an identifiable school code (indicating which school site) while 35% did not. Of the students who did have an identifiable school code, 25% were from School RC and 18.3% were from School SE. Only ten (16.7%) reported a known family history of attention-deficit/ hyperactivity disorder.

Actual data were provided for these children by adults with some caretaker responsibilities. The most frequent type of rater was the biological mother, of which there were 49 (81.7%) while biological fathers, guardians, or others each were three (5%); whereas, one was a stepfather and one was a stepmother. Table 3 provides the descriptive statistics for the continuous or measurement variables in the data base. Since all Kitano measures were separate factors and contained differing numbers of items, each scaled on a five-point Likert scale, they

were put in the same metric by dividing the sum of all items for a factor by the number of items. This gave an estimate of the rater's judgment on that factor. An average of exactly 3.0 would be mid-scale value. Four Factors and the Total were below 3.00 and three were above 3.00.

Table 3

Descriptive Statistics for the Study Variables (N = 60)

Variable	Mean	SD
Kitano Total	2.42	0.43
Kitano Emotional Sensitivity	2.60	0.61
Kitano Imaginational Sensitivity	2.84	0.69
Kitano Intellectual Precocity	2.39	0.61
Kitano Critical Attitude	2.53	0.60
Kitano Intellectual Intensity	3.40	1.03
Kitano Psychomotor	3.44	0.87
Kitano Task Commitment	3.35	0.61
ACTeRS Attention	46.15	5.84
ACTeRS Hyperactivity	44.52	6.92
ACTeRS Social Skills	51.87	5.91
ACTeRS Oppositional Behavior	43.15	7.80
ACTeRS Early Childhood	51.93	6.07
<u>Age of Child in Years</u>	<u>6.05</u>	<u>0.53</u>

In Table 3, the ACTeRS Mean scores are expressed in T-scores with a mean of 50 and standard deviation of 10. In rating psychological intensities, parents perceived their children as strongest in Psychomotor Intensity, Intellectual Intensity, and Task Commitment. In perceiving indicators of AD/HD, parents viewed their children as better in Early Childhood and Social Skills. The mean age for subjects was 6.05 years (See Table 3).

Research Question One

The first research question is: What is the relationship between psychological intensities as defined by Kitano's factors (Emotional Sensitivity, Imaginational Sensitivity, Intellectual Precocity, Critical Attitude, Intellectual Intensity, Psychomotor Intensity, and Task Commitment) and the indicators of Attention-Deficit/Hyperactivity Disorder as measured by the ACTeRS (Attention, Hyperactivity, Social Skills, Oppositional Behavior, and Early Childhood) for kindergartners? The null hypothesis for this question states that no interrelationship exists between parent perceptions of psychological intensities and parent perceptions of AD/HD. The bivariate correlations (See Table 4) provide evidence that some significant relationships did exist for the psychological intensities and indicators of AD/HD, therefore the null hypothesis was rejected.

As shown in Table 4, the ACTeRS Hyperactivity factor correlated significantly with all of the Kitano measures, the ACTeRS Early Childhood factor correlated with five of the Kitano measures, the ACTeRS Attention with three of the Kitano measures, and the ACTeRS Oppositional Behavior correlated the two of the Kitano measures. It should be noted that the ACTeRS Social Skills did not correlate with any of the Kitano measures.

Table 4

Correlation of Kitano Measures with the ACTeRS Measures

Scale	ACTeRS				Early Childhood
	Attention	Hyperactivity	Social Skills	Oppositional	
Total Kitano	-0.21	-0.57**	-0.17	-0.21	-0.38*
Emotional Sensitivity	-0.03	-0.42**	-0.16	-0.18	-0.36*
Imaginational Sensitivity	-0.29*	-0.47**	-0.11	-0.18	-0.32*
Intellectual Precocity	-0.24	-0.47**	-0.25	-0.29*	-0.27
Critical Attitude	-0.10	-0.32*	-0.25	-0.20	-0.36*
Intellectual Intensity	-0.40	-0.33*	0.06	0.03	-0.19
Psychomotor Intensity	-0.26*	-0.60**	-0.13	-0.32*	-0.36*
Task Commitment	-0.37**	-0.32*	-0.05	0.05	0.00

Note: **Correlation is significant at the 0.01 level (two-tailed)

*Correlation is significant at the 0.05 level

Research Question Two

Research Question Two is: Is parent perception of psychological intensities as measured by the Kitano Parent Questionnaire similar for kindergarten boys and girls? The null hypothesis states that there are no differences between the two groups.

The eight gender group comparisons in Table 5 assessed the null hypothesis. Females scored higher than males in five of eight areas, with significant results occurred in the Kitano Total, Emotional Sensitivity, Imaginational Sensitivity, Intellectual Intensity, and Task Commitment.

Table 5

Comparison between Male and Female Subjects on the Seven Kitano Factors and the Total Score

Kitano Factor	Gender	N	Mean	SD	t	p
Total	Male	34	2.30	0.44	-2.58	.013*
	Female	26	2.58	0.38	-2.58	.013*
Emotional Sensitivity	Male	34	2.44	0.59	-2.28	.027*
	Female	26	2.80	0.60	-2.28	.027*
Imaginational Sensitivity	Male	34	2.65	0.60	-2.49	.016*
	Female	26	3.08	0.75	-2.49	.016*
Intellectual Precocity	Male	34	2.35	0.68	-0.49	.629
	Female	26	2.43	0.51	-0.49	.629
Critical Attitude	Male	34	2.43	0.71	-1.62	.138
	Female	26	2.66	0.38	-1.62	.138
Intellectual Intensity	Male	34	3.13	0.83	-2.52	.015*
	Female	26	3.77	1.16	-2.52	.015*
Psychomotor Intensity	Male	34	3.26	0.91	-1.87	.067
	Female	26	3.68	0.76	-1.87	.067
Task Commitment	Male	34	3.22	0.67	-2.00	.050*
	Female	26	3.53	0.47	-2.00	.050*

Note: **Correlation is significant at the 0.01 level (two-tailed)

*Correlation is significant at the 0.05 level

Research Question Three

Research Question Three is: Is parent perception of indicators of Attention-Deficit/Hyperactivity Disorder similar for boys and girls? The null hypothesis states that there is no difference between boys and girls on indicators of AD/HD.

Information summarized in Table 6 compares the mean scores for the five ACTeRS factors between males and females. Of these, only Hyperactivity was significant at the .05 level, with parents reporting more hyperactivity for boys than girls.

Table 6

Comparison of Male and Female Subjects on the Five ACTeRS Scores

ACTeRS Subtest	Gender	N	Mean	SD	t	p
Attention	Male	34	50.15	5.97	1.55	.128
	Female	26	47.85	5.51	1.55	.128
Hyperactivity	Male	34	46.38	6.81	2.51	.015*
	Female	26	42.08	6.39	2.51	.015*
Social Skills	Male	34	52.15	6.06	0.42	.678
	Female	26	51.50	5.81	0.42	.678
Oppositional Behavior	Male	34	43.18	8.17	0.03	.977
	Female	26	43.12	7.94	0.03	.977
Early Childhood	Male	34	53.79	5.31	2.82	.077
	Female	26	49.50	6.23	2.82	.077

Note: **Correlation is significant at the 0.01 level (two-tailed)

*Correlation is significant at the 0.05 level

Research Questions Four and Five

Research Question Four is: Which Kitano factors significantly predict parent perception of Hyperactivity? The null hypothesis for this question states that Hyperactivity is not a function of the Kitano factors. A stepwise multiple regression was conducted to assess this hypothesis. In this analysis, perceived Hyperactivity served as the criterion variable that was regressed upon the eight Kitano factors. The results of this analysis are presented in Table 7. As noted there, two of the Kitano factors (Psychomotor Intensity and Imaginational Sensitivity) were significantly predictive of child's Hyperactivity.

Research Question Five is: Which Kitano factors significantly predict parent perception of Attention? The null hypothesis for this question states that Attention is not a function of the Kitano factors. A stepwise multiple regression was conducted to assess this hypothesis. Parent perception of Attention, the dependent or criterion variable, was regressed upon the eight Kitano predictors. Also presented in Table 7, the results of this analysis suggested that only Task Commitment was significantly predictive of Attention. However, Task Commitment's very poor Chronbach's Alpha coefficient must be considered in any interpretation of these results.

Table 7

Stepwise Multiple Regression for Predicting ACTeRS Scores from Kitano Measures

ACTeRS Kitano Variable	Predictor	R2	Adj. R2	B-weight	t	p
Attention	TC	.133	.118	-.365	-2.986	.004**
Hyperactivity	PI	.359	.348	-.484	-4.136	.000**
Hyperactivity	IS	.403	.382	-.240	-2.049	.045*
Social Skills						
Oppositional Behavior	PI	.101	.085	-.318	-2.550	.013*
Early Childhood	ES	.132	.117	-.363	-2.968	.004**

Note: **Correlation is significant at the 0.01 level (two-tailed)

*Correlation is significant at the 0.05 level

Taken together, the regression results revealed that no predictor correlated significantly with Social Skills. Psychomotor Intensity was significantly predictive of Oppositional Behavior, while Emotional Sensitivity was significantly predictive of Early Childhood.

CHAPTER V

Summary, Conclusions, and Implications

This chapter discusses the relationship of psychological intensities to indicators of Attention-Deficit/Hyperactivity Disorder. After limitations of the study are reviewed, the findings of the study are summarized, followed by tentative conclusions. Theoretical implications as well as implications for school psychology practice are noted. Suggestions for further research are given, followed by concluding remarks.

Limitations of the Study

Due to unforeseen circumstances surrounding the May 3, 1999 tornado that devastated a substantial portion of the school district in which the study was conducted, the researcher and her committee unanimously agreed to postpone data collection until a much later time to allow for the community and individuals to recover. Even so, this event was still likely to have had a delayed effect on parent participation in the study. Although parents of kindergarten students in seven elementary schools were invited to participate, only two schools had noticeable numbers of parents that volunteered to do so. With a potential population in the hundreds, about 80 parents completed the packets, with only 60 data sets being complete. Because this N is small, all conclusions are tentative.

Because participation was voluntary and kindergarten classes in six selected schools in the same suburban district were chosen, true randomization could not be obtained. In research, there are differences between persons who choose to participate and those who do not (Cox, Rutter, Yule, & Quinton, 1977). In addition, there can be some response bias inherent in parent-report measures (Borg & Gall, 1989). Thirdly, while best practice recommends that multiple measures be obtained from multiple raters across settings, this study was limited to having only one parent or caretaker complete both instruments, which avoided interrater reliability problems. However, generalization beyond the home setting cannot be made with confidence. Using a kindergarten population involved young children largely unidentified for either advanced developmental potential or AD/HD; there are inherent diagnostic complications in working with children so young that characteristics related to either group are more tolerated at this developmental stage.

In attempting to assess psychological intensities with the Kitano Parent Questionnaire instrument, selected because it was designed for that purpose with this age group, it was disappointing that the Kitano instrument lacked the psychometric properties needed to make any conclusions with confidence. One must not rely on one single measure, but multiple measures including parent and teacher observations and anecdotal records of areas of development in these very young children. The KPQ did not directly measure children's characteristics, but their parents' perceptions of the characteristics. Although Kitano's factor analysis (variables with loadings of .4 or more) was utilized, its factors were not orthogonal, or independent. The instrument's Likert scale included the option of "Don't Know," which could markedly lower the factor score even though other numbers in the same factor were high. Importantly, validity and reliability studies had not yet been accomplished, according to the author. While content validity is assumed in Kitano's assessment of psychological intensities, actual validity and reliability coefficients were unknown. Therefore, Chronbach's Alpha was calculated on this study,

providing a very good reliability coefficient of .87 for the KPQ Total score, and a few factor reliability coefficients were fairly good as well (see Table 2). However, the internal consistency reliability for Task Commitment was so poor that it precludes any interpretation for this factor. Generally there was low reliability for individual scales.

Summary of Findings

The reader is cautioned that the limitations of a small, non-randomized sample accordingly impacts the generalizations and conclusions that may be drawn from the study. Generalization is assumed to be limited. The Chronbach's Alpha analysis of the KPQ found that the Total score had good internal consistency of .87. Three other factors—Emotional Sensitivity, Intellectual Intensity, and Psychomotor Intensity yielded reliability scores at .66 or above. However, Task Commitment was so poor, it does not measure what it purports to measure.

Although all findings are exploratory, noteworthy was the finding that parents' perception of Hyperactivity was negatively correlated with all the Kitano factors. In other words, high scores on psychological intensities were associated with poor scores for Hyperactivity, which is what we would expect theoretically—Barkley's premise that AD/HD is a disorder of inhibition, is seen in problematic (low) scores in Hyperactivity, which is significantly related to every Dabrowski psychological intensity factor in Kitano's instrument. The strongest of those relationships (-.60) was with Psychomotor Intensity, which most closely fits intuitively with Hyperactivity. Theoretically these are similar constructs, only the former is regarded as a positive attribute of advanced developmental potential, while the latter is generally negatively viewed in the array of behaviors associated with AD/HD. Early Childhood was negatively associated with five psychological intensities (all but Intellectual Precocity, Intellectual Intensity, and Task Commitment), again supporting the theoretical premise of this study. The

more that parents perceive their child as having psychological intensities associated with advanced developmental potential, the more likely they are to report that their child had behavioral difficulties as a very young child. A poor score in Early Childhood is regarded as a hallmark diagnostic marker for AD/HD. Low scores indicating problematic Attention negatively correlated with three psychological intensities: Imaginational Sensitivity, Psychomotor Intensity, and Task Commitment. While poor Attention could be apparent in daydreaming theoretically associated with Imaginational Sensitivity, and in hyperactivity-related short attention spans in Psychomotor Intensity, it seems surprising that it is negatively correlated with Task Commitment, which would appear to require good attention to task. However, Task Commitment was the only subscale that had a very poor reliability coefficient in the Chronbach's Alpha analysis, indicating no evidence of any internal consistency reliability. Therefore, no conclusions can be made regarding Task Commitment.

Girls were more emotionally sensitive than boys on the KPQ in five out of eight scores. Gender norms were utilized on the ACTeRS, but in kindergarten, the gap that the literature documents well, has already begun for boys, but only in Hyperactivity.

Hyperactivity was significantly predicted by Psychomotor Intensity and Imaginational Sensitivity. Instead of being distinct constructs, these appear to overlap.

Conclusions

The Chronbach's Alpha called attention to the Task Commitment factor of the KPQ and its lack on internal consistency reliability, rendering it virtually meaningless. That factor does not measure Task Commitment. Consequently, Task Commitment's predictive value for Attention cannot be regarded with any confidence. However, the KPQ Total score remained

strong, as did Emotional Sensitivity, with Intellectual Intensity and Psychomotor Intensity almost as high. This instrument appears to have content validity in these areas.

Comparing the correlations of the KPQ with the ACTeRS, one can look at discriminant validity between the two measures, which differed most in assessing Social Skills. Correlations begin to occur in Oppositional Behavior, with more occurring in Attention. Early Childhood has higher correlation with the Kitano factors, and Hyperactivity correlates with all KPQ factors. From this one can conclude that, except for Social Skills, these two instruments both tap into these other constructs, especially Hyperactivity.

The negative correlation of ACTeRS Hyperactivity with every Kitano factor was significant. In other words, children with rated hyperactivity problems were perceived by their parents as having psychological intensities often associated with advanced developmental potential. The “disharmony within the individual and in his adaptation to the external environment” (Dabrowski, 1964, p. xiv), which is associated with disintegration, seems to fit well with Hyperactivity. The behavioral disinhibition shown by hyperactive children can elicit negative bias from adults, or even mask areas of advanced development, but at this tender age, parents may be less judgmental and more tolerant of these behaviors in their kindergarten children. In the course of normal development, kindergarteners are generally more active and are only beginning to learn self-control and other executive functions.

Early Childhood indicators of AD/HD, a diagnostic hallmark in this disorder, correlated negatively with five psychological intensities. Parents who viewed their child as having early indicators of hyperactive-impulsive behavior, or behavioral disinhibition, perceived them as having some psychological intensities (as measured on Kitano’s Parent Questionnaire), which are often associated with developmental potential. This may support Barkley and Biederman’s (in press) contention that it is developmentally inappropriate to have an age threshold of seven years for diagnosing AD/HD. Inattention occurs later than the Hyperactive-Impulsive behaviors,

which emerge first, beginning at ages three to four years of age. In the kindergarten population, Barkley's theory would surmise that the majority of children in kindergarten would show the hyperactive-impulsive behaviors, but inattention would generally not appear until middle elementary grades.

It was interesting that Social Skills were not predicted by any of the Kitano measures, in part perhaps because most kindergarten children have not yet developed nor are expected to possess many social skills. Any deficits in this area would not necessarily stand out, especially by the nature of the classroom environment in which almost all activities are done within the group to promote social skills development.

Boys' scores were significantly lower than girls' in the Kitano Total Score, Emotional Sensitivity, Intellectual Intensity, and Task Commitment, which on the surface may intuitively appear congruent, but only Emotional Sensitivity survived further statistical scrutiny. Girls were significantly more emotionally sensitive than boys.

Other findings indicated that age only correlated with Intellectual Precocity, which would probably be more evident in an older child than a very young child such as a kindergartener, who would be less likely to stand out from the group academically. These findings add much to the understanding of how parents perceive their kindergarten children regarding the indicators of AD/HD and psychological intensities associated with giftedness and creative potential.

Theoretical Implications

The significant findings that indicators of AD/HD were negatively correlated to psychological intensities is supportive of the theoretical premise of this study. Parents of kindergarten students recognized indicators both of problematic AD/HD and high psychological

intensities in their children, generally showing tolerance of these behaviors and less negativity than had been anticipated. This study verified the diagnostic difficulties associated with these young children in determining characteristics of advanced developmental potential or AD/HD, as noted in the literature. This study supports Barkley's premise that behavioral inhibition necessary for enabling of the four executive functions is still immature, at best. Most kindergarten children fail to inhibit the prepotent response, interrupt an ongoing response, or control interference long enough for any executive functions to operate, as Barkley's model explains. The study findings that the ACTeRS Hyperactivity factor negatively correlated with every Kitano factor is consistent with Barkley's (1991, 1994) theory, which identifies impulsivity, or impaired response inhibition, as the core deficit of AD/HD, that emerges at a younger age (preschool) than concomitant attention problems, which generally first appear during mid to late elementary grades. More research is needed at this developmental level. The developmental traits of attention and inhibition, which are prerequisite to learning, occur on a continuum and lead to diagnostic significance to the extent which they deviate significantly from the norm.

Instead of assuming that AD/HD has only negative effects, one can understand through Dabrowski's theoretical constructs that these overexcitabilities can potentially enhance the realization of development for a young individual, and should be nurtured and encouraged. Dabrowski normalizes some pathology as evidence of the developmental process of positive disintegration. Hierarchically, psychomotor intensity, or hyperactivity, would most commonly occur of all the psychological intensities. This finding was verified in this study. From a lower psychomotor level to a higher psychomotor level, some children would have sensual intensity. Proceeding to higher levels involving cortical functioning, the next would be imaginal intensity, then intellectual, until the highest level—emotional intensity, which is less commonly

seen because it is a more complex level of development. In this study, Emotional Intensity only correlated with Hyperactivity and Early Childhood.

The finding that Hyperactivity was predicted by Psychomotor Intensity and Imaginational Intensity has implications for designing appropriate early interventions for these children. Youngsters who are hyperactive have high levels of energy, activity, and sensitivity to change, but less apparent may be their active fantasy life, sensitivity to separation, and nonconformity. By structuring activities in which these talents may be channeled in positive directions, such as in drama, role-playing, creative writing, and/or free play as a reward for completing assignments, one may help shape their behavior into more goal-directed, future-oriented, adaptive behaviors associated with advanced developmental potential.

Additional classroom interventions include special teaching techniques, changing the learning environment, and accommodating assignments to the student's strengths (Sattler, Weyandt, & Roberts, 2002). Emphasize the importance of paying attention during instruction and directions, and reinforce attention to task. Incorporate multi-sensory methods and colorful, stimulating activities into lessons, allowing for some physical movement and hands-on materials when appropriate. Teach students how to use organizational tools such as calendar/organizers, assignment books, color-coded folders for different subjects, and study and memory strategies such as mnemonics or use of reminders such as Post-It notes and tabs. Provide small-group instruction with step-by-step methods with frequent practice and feedback. Use of checklists, written directions and assignments, and with older students, self-monitoring procedures, may be helpful. Peer tutoring in which the target student is paired with a peer who models desired attributes, is suggested. Simplify directions and present them at a slower rate; encourage students to ask for repetition of directions when they do not understand, instead of guessing. For students in third grade and above, behavior contracts could be utilized, with the student choosing the reinforcer from a menu of potential reinforcers in advance. Preferential seating closest to where

instruction is presented, and ideally near quiet students, and/or use of a study carrel may help reduce distractions. Scheduling more difficult academic subjects earlier in the school day may be beneficial as attention span wanes.

Implications for School Psychology Practice

Giftedness is an area often neglected or minimized in a school psychologist's training, practicum, and internship experiences. To best serve the population targeted in this study, and to make differential diagnoses, the school psychologist should have expertise both in gifted education as well as Attention-Deficit/Hyperactivity Disorder, as well as general knowledge about child development.

Gifted children with AD/HD generally demonstrate greater inter- and intra-test variability on tests of intelligence and achievement. Missing easier items and answering more difficult items, these children show greater amounts of scatter, often ranging from average to very superior. When working with highly gifted children, the school psychologist should become acquainted with the individual's areas of strengths to be cognizant of how those may mask their weaknesses.

Gifted children are frequently misidentified or under-identified as having attention deficit disorder, but for those that do have AD/HD, there is often a lack of services to this population. This could be due in part because they frequently do not manifest adverse educational effects compared to their classmates. Another factor could be the stigma associated with labeling with a disability such as AD/HD. The current federal funding system for special education fosters the practice of pathologizing a child's behavior in order to enter the gateway to special education services. For young children, this may result in postponing services predicated on pathology until, after months or even years of failure, their behavior is so extreme or

academic performance is severely discrepant compared to their expected ability and with that of their peers. There is a general tendency of adults to view such characteristics associated with psychological intensities and AD/HD in children and youth negatively, rather than as potential signs of creativity or high intellectual ability. Careful consideration of setting and context in which misbehaviors occur can assist in the diagnostic process, so classroom observations are key in assessing the function of the behaviors. Individual assessment may be considered on an individual basis, especially to rule out learning disabilities or other disorders. Less intrusive, non-medical interventions at home and school should be attempted prior to trying more intrusive interventions such as medication.

This study also underlines the necessity of providing careful early identification and research-based interventions to these children. As children go through the negative aspects of positive disintegration and difficulties such as with hyperactivity, framing this as a normal part of development instead of pathologizing these behaviors is so important to their self-esteem and well-being.

Suggestions for Further Research

Much more research is needed for this developmental stage in the areas related to the indicators of AD/HD and advanced development, as well as for potential differential diagnosis with both groups as well as those who have dual exceptionalities of AD/HD and giftedness. Perhaps the Kitano Parent Questionnaire could be improved, refined, or revised; additional reliability and validity studies should be done. The use of a different instrument for assessing psychological intensities in children is suggested, as well as a different measure of AD/HD, perhaps with an older age group in which these traits may be more easily recognized. Use of multiple measures is important in developing a research protocol for tapping these constructs in

young children. Certainly a larger subject group would strengthen any statistical findings as well. Further research is needed in the area of working memory in children, exploring the development of internalization of speech into verbal working memory as well as nonverbal working memory. The mapping of the human genome will contribute further intriguing information as to genetic links in AD/HD.

Concluding Remarks

Diagnosing AD/HD remains a combination of both art and science, due to the lack of a precise diagnostic standard for this disorder. When a child is also gifted, the diagnostic process is complicated even further. However, this challenge should be viewed in developmental context with great care and caution. It is best practice to use multiple measures across settings from multiple sources. Working with gifted children who may have AD/HD requires expertise in both areas, as well as a great deal of caution to avoid misidentification. If behavior problems are involved, a functional behavioral assessment to ascertain the context, antecedents, and consequences of the behaviors of concern is needed. In our public and private schools, it is important to look at other factors as well, including curriculum that may be boring, the use of novelty, intrinsic and extrinsic reinforcers, and negative bias sets of adults.

A better understanding of the developmental progression of AD/HD within the context of development could lead to earlier interventions which are more specifically targeted for success for these children, not only in school but in all aspects of life. Reframing psychological intensities in more positive light and de-emphasizing pathology can only help these children to better achieve their potential, as we nurture their precious individuality and unique talents and gifts. Rather than seeking pathology, perhaps it is better to focus on children's development to help provide the early interventions needed to maximize their potential.

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Appendix A

Verbal Outline

- I. Welcome
- II. Introduction
 - a. Self
 - b. Research Project
 - i. Must be parent or guardian of Kindergarten child
 - ii. Only one rater per child completes both questionnaire
- III. Consent Form
 - a. Two required—one for parent to keep, one for me to keep
 - b. Change office address to new address
- IV. Cover Sheet
 - a. Review Cover Sheet with group
 - b. School Code located in lower left corner
 - c. Packet Code located in lower right corner
 - i. Packet A = ACTeRS first
 - ii. Packet B = Kitano Parent Questionnaire first
- V. Write child's initials only—no names—and birthdate on both questionnaires now
- VI. Please start questionnaires in order given in packet; raise hand for assistance.
- VII. Upon completion, check over
 - a. Every question answered?
 - b. Child's initials only—no names—and birthdate—on all three items?
 - c. Cover sheet data completed?
- VIII. Turn in all three paper-clipped together in same order in large envelope

- IX. Get packet of handouts
 - a. Ways to Set Children Up to Succeed
 - b. NASP Handout: Attention Deficit Disorder: A Primer for Parents
 - c. NASP Handout: ADHD Look-Alikes: Guidelines for Parents
 - d. Positive Discipline Guidelines

Appendix B

Parent Consent Form

CONSENT FORM

I, _____, hereby authorize or direct Candis Hogan or associates or assistants of her choosing, to perform the following procedure: :

As the parent/guardian of a kindergarten student for the 1999-2000 school year, I agree to complete two questionnaires about my child. The duration of my participation is the time it takes to complete these two questionnaires (about 10-20 minutes each). If I desire, I may ask that any word, phrase, question, or entire questionnaire be read to me by Candis Hogan or her associate or assistant. I am asked to offer honest answers about my child's behavior. In appreciation for my participation, after completing the two questionnaires, I will receive an informational packet about parenting tips and behaviors commonly associated with attention deficit/hyperactivity disorder. I understand that my participation in no way implies the presence or absence of AD/HD or any other disorder.

To protect confidentiality, the necessary information identifying my child will be coded. Therefore no individual results will be available. However, general group results of the research may be requested through the school office and will be made available at the end of the project. These coded records will be kept in a locked file cabinet under the supervision of Candis Hogan for one year from the end of research usefulness, and then destroyed by (supervised) shredding.

Through this research, it is hoped to learn more about the early developmental progression of attention and emotional growth in kindergarten. Providing aggregate results for this project to participating parents/guardians and educators will promote better awareness of normal development at this age. This study may offer a different, more positive paradigm for viewing those behaviors commonly associated with AD/HD.

This is done as part of an investigation entitled "The Relationship of Psychological Intensities to Attention Deficit/Hyperactivity Disorder in Kindergarten Children." The purpose of the procedure is to examine the relationship of indicators of Attention Deficit/Hyperactivity Disorder to

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Psychological Intensities (as defined by Kitano for preschoolers), according to parent perception.

"I understand that my participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty after notifying the project director." I may contact Candis Hogan (project director) after 3:30 p.m. at (405) 739-1696, 306 Brett Dr., Midwest City, OK 73110 or after 4:30 p.m. at (405)769-5929. I may also contact Gay Clarkson, IRB Executive Secretary, 203 Whitehurst, Oklahoma State University, Stillwater, OK 74078; telephone number (405) 744-5700.

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

Date: _____ Time: _____
(a.m./p.m.)

Signed: _____
Signature of Parent/Guardian

I certify that I have personally explained all elements of this form to the subject or his/her representative before requesting the subject or his/her representative to sign it.

Signed: _____
Project Director or his/her authorized representative

Appendix C

Cover Sheet

COVER SHEET

Today's Date: Month____Day____Year____
My child's birth date: Month____Day____Year____

Person completing questionnaires: I am this child's
(circle one) biological mother stepmother guardian
biological father stepfather other_____

Is there a family history of AD/HD? No Yes If yes, what
relative(s) in your family has/have the diagnosis of AD/HD?

What are this child's initials?
first initial____ middle initial____ last initial____

This child's gender (Circle one): Male Female

This child's race (Circle one): 01 African American
02 Native American 03 Asian 04 Hispanic 05 White & Other

What is this child's birth order? ____ of ____ children

This child has ____older brother(s) ____older sister(s)
____younger brother(s) ____younger sister(s)
____a twin brother ____a twin sister

School Code: ____ Packet Code (Circle one): A B

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Appendix D

Kitano Parent Questionnaire

PARENT QUESTIONNAIRE

Please read each item and circle the number which most closely describes your child.

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	Almost Never	Seldom	Some- times	Often	Almost Always	Don't Know
1. My child becomes bored with repetition.	1	2	3	4	5	D/N
2. My child gets impatient waiting for others in a group to follow directions or understand concepts.	1	2	3	4	5	D/N
3. My child prefers to play with older children rather than children of his/her own age.	1	2	3	4	5	D/N
4. My child likes to do things differently from the group.	1	2	3	4	5	D/N
5. My child understands directions but does things his/her own way.	1	2	3	4	5	D/N
6. Others call my child a show-off.	1	2	3	4	5	D/N
7. When uncomfortable with a task, my child responds by asking questions or changing the subject.	1	2	3	4	5	D/N
8. If my child is interrupted from an interesting activity, he/she tries to return to the activity.	1	2	3	4	5	D/N
9. My child approaches questions very seriously.	1	2	3	4	5	D/N
10. My child questions the reasons for my demands.	1	2	3	4	5	D/N
11. My child ignores deadlines and persists in interesting tasks until completed to his/her satisfaction.	1	2	3	4	5	D/N

	Almost Never	Seldom	Some- times	Often	Almost Always	Don't Know
12. My child enjoys learning but seems uninterested in demonstrating knowledge on demand.	1	2	3	4	5	D/N
13. My child pursues ideas which seem off the subject.	1	2	3	4	5	D/N
14. My child ignores or omits details when asked to perform a task.	1	2	3	4	5	D/N
15. My child becomes upset by others' failure to understand or appreciate his/her ideas.	1	2	3	4	5	D/N
16. My child makes comments which are critical of others.	1	2	3	4	5	D/N
17. My child criticizes others in a humorous or sarcastic way.	1	2	3	4	5	D/N
18. My child becomes frustrated when his/her performance does not meet his/her standards.	1	2	3	4	5	D/N
19. My child is highly sensitive to criticism by others (e.g., cries, becomes angry, or withdraws).	1	2	3	4	5	D/N
20. My child seeks recognition by others of his/her accomplishments.	1	2	3	4	5	D/N
21. My child chooses to play or work by himself/herself.	1	2	3	4	5	D/N
22. My child becomes visibly upset by the unfair treatment of others.	1	2	3	4	5	D/N
23. My child's intellectual or academic development exceeds his/her motor and physical development.	1	2	3	4	5	D/N

	Almost Never	Seldom	Some- times	Often	Almost Always	Don't Know
24. My child refuses to participate in activities in which he/she cannot be "the best."	1	2	3	4	5	D/N
25. My child's preoccupation with abstract ideas causes peers to tease him/her.	1	2	3	4	5	D/N
26. My child expresses feelings of being different from other children.	1	2	3	4	5	D/N
27. My child is active and energetic, runs rather than walks, and is constantly on the go.	1	2	3	4	5	D/N
28. My child talks about his/her activities with excitement and enthusiasm.	1	2	3	4	5	D/N
29. My child approaches activities he/she likes with excited cries and bouncing energy.	1	2	3	4	5	D/N
30. My child quickly notices odors, colors, and noises and comments on them.	1	2	3	4	5	D/N
31. My child is sensitive to changes in lighting and temperature and comments on them.	1	2	3	4	5	D/N
32. My child vigorously pursues a problem or task (e.g., a model, puzzle, or art project) until he/she completes it, even if it takes a long time.	1	2	3	4	5	D/N
33. My child has an active fantasy life, such as imaginary friends.	1	2	3	4	5	D/N
34. My child's stories mix truth and fiction.	1	2	3	4	5	D/N
35. My child can recall events or objects in						

	1	2	3	4	5	D/N
	Almost Never	Seldom	Some- times	Often	Almost Always	Don't Know
vivid detail.						
36. My child becomes upset by separation from family members or close friends (e.g., trips, moving away).	1	2	3	4	5	D/N
37. My child expresses concern about other people's feelings.	1	2	3	4	5	D/N
38. My child reacts (e.g., cries, withdraws) when another person is crying.	1	2	3	4	5	D/N
39. My child tries to comfort others who are in pain.	1	2	3	4	5	D/N
40. My child questions himself/herself about his/her own behavior.	1	2	3	4	5	D/N

Appendix E

Institutional Review Board Approval

**Oklahoma State University
Institutional Review Board**

Protocol Expires: 6/13/02

Date: Thursday, June 14, 2001

IRB Application No: ED00263

Proposal Title: THE RELATIONSHIP OF PSYCHOLOGICAL INTENSITIES STO ATTENTION
DEFICIT/HYPERATIVITY DISORDER IN KINDERGRTEN CHILDREN

Principal Investigator(s):

Candis Hogan
13872 Hummingbird Dr
Choctaw, OK 73020

Diane Montgomery
424 Willard
Stillwater, OK 74078

Reviewed and Expedited Continuation

Approval Status Recommended by Reviewer(s): Approved

Signature:

Carol Olson by J. D. Brown
Carol Olson, Director of University Research Compliance

Thursday, June 14, 2001

Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modifications to the research project approved by the IRB must be submitted for approval with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

VITA 2

Candis Jean Hanson Hogan

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE RELATIONSHIP OF PSYCHOLOGICAL INTENSITIES TO ATTENTION-DEFICIT/HYPERACTIVITY DISORDER IN KINDERGARTEN CHILDREN

Major Field: Educational Psychology

Biographical:

Education: Graduated from Midwest City High School, Midwest City, Oklahoma in May 1968; received Bachelor of Science in Elementary Education Summa Cum Laude at Southwestern State College, Weatherford, Oklahoma in May 1972; received Master of Education in Counseling Psychology Magna Cum Laude at Central State College in Edmond, Oklahoma May 1981. Completed the requirements for the Doctor of Philosophy degree with a major in Educational Psychology in School Psychology at Oklahoma State University in December 2002.

Licenses/Certifications: Nationally Certified School Psychologist; School Psychology Certification-Oklahoma; School Psychometry Certification-Oklahoma; Licensed Professional Counselor-Oklahoma; Standard Teaching Certificate-Oklahoma.

Experience: Employed as a fourth-grade teacher 1972-1980, employed as a graduate assistant in Special School Services at Central State College 1981-1982, employed as gifted/talented coordinator at Crutch and Oakdale Dependent Schools 1981-1982, employed as school psychologist at Mid-Del Public Schools 1982-1987, 1988-Present, employed as school psychologist at New Richmond Schools, New Richmond, Ohio 1987.

Professional Organizations: American Association of University Women; American Psychological Association-Student Member; National Association of School Psychologists; Oklahoma School Psychological Association; Oklahoma Psychological Association, Associate Member; Psi Chi National Honor Society in Psychology; National Education Association; Oklahoma Education Association; Student Education Association-Southwestern State College; Council for Exceptional Children; Oklahoma Association for Children & Adults with Learning Disabilities; Oklahoma Association for Counseling and Development; Delta Kappa Gamma (Christian Women Educators); Kappa Delta Pi; Alpha Lambda Delta; National Society of Collegiate Scholars

Awards/Honors/Accomplishments: 1981-82 G. Fay Catlett Graduate Student Award, CSU; President's Honor Roll, CSU and SWSC and OSU; Dean's Honor Roll, CSU and SWSC and OSU; Psi Chi Essay Contest Winner; Crutcho Teacher of the Year; Delta Kappa Gamma International Eunah Temple Holden \$5000 Scholarship; Delta Kappa Gamma State Dora McFarland \$3000 Scholarship; Oklahoma State Improvement Grant for Retention, Recruitment, and Retraining 2001-2003 Blueprint Committee and School Psychology Task; Force Chairperson; Oklahoma School Psychologist of the Year 2001-2002.