EFFECTS OF SHARED PERSONALITY TYPES OF PARENTS AND CHILDREN WITH HIGH FUNCTIONING AUTISM SPECTRUM DISORDERS ON PARENTAL STRESS

A DISSERTATION

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To the Dean of the Graduate School:

I am submitting herewith a dissertation written by Laura K. Darby entitled "Effects of Shared Personality Types of Parent and Children with High Functioning Autism Spectrum Disorders on Parental Stress." I have examined this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in School Psychology.

Kathy DeOrnellas, Ph.D., Major Professor

We have read this dissertation and recommend its acceptance:

Department Chair

Accepted:

Dean of the Graduate School

DEDICATION

To my parents, whose belief in me has carried me farther than my abilities ever could and who provided me with the childhood every kid deserves while instilling in me the belief that all "types" have unique gifts and one is no better than another. And to my favorite writer who has inspired me my entire life. You left far too big footprints for me to ever catch up but your example and outstretched hand carry me ever onward…

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ABSTRACT

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EFFECTS OF SHARED PERSONALITY TYPES OF PARENTS AND CHILDREN WITH HIGH FUNCTIONING AUTISM SPECTRUM DISORDERS ON PARENTAL STRESS

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The increase in reported cases of children with autism calls for an increasing understanding of how their diagnosis affects the relationship between parent and child. This study investigated the interaction of personality types between parents and their children diagnosed with high functioning autism and stress. Personality type for children was measured by the Student Styles Questionnaire and for parents the Myers Briggs Type Indicator was used. Parental stress was measured by the Parenting Stress Index / Short Form or the Stress Index for Parents of Adolescents depending on the child's age. Results showed that parent and child similarity on personality types resulted in more stress on the thinking/feeling personality dimension. The study was broken down to two smaller studies. An additional comparison group of children without a clinical diagnosis matched on ethnicity, age, and gender was used to compare the reported level of stress between parents of a child with autism and those without. Statistical analyses revealed that parents of children with high functioning autism, Asperger's Disorder or Pervasive Developmental Disorder report more stress than parents of children without a diagnosis. Additional comparisons were made with the combined autism group and the matched

comparison group to investigate if there are differences between the stress experienced by mother and fathers. Analyses indicated that mothers report similar stress as fathers.

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CHAPTER I

INTRODUCTION

In 1943, Leo Kanner published an account of children who shared certain personality characteristics. He described "autistic aloneness" and "a desire for sameness" (Frith, 2003, p. 6). A year later, Hans Asperger also published accounts of children with similar characteristics, but not to the marked degree observed by Kanner (Frith). One of the common aspects these researchers reported was the child's inability to form normal relationships (Frith). Originally both researchers used the term "autistic" in characterizing these children, which comes from the Greek word 'autos', meaning 'self.' (Frith)

Previously, Eugen Bleuler had used the term "autism" to describe children diagnosed with childhood schizophrenia who experienced the "narrowing of relationships to people and to the outside world" (Frith, 2003, p. 5). However, unlike Bleuler, Kanner and Asperger used the term to describe a condition that was present from birth. According to Kanner, the children seemed to have "inborn autistic disturbances of affective contact" (Frith, p. 7). Asperger reiterated Kanner's observations in his work. Both researchers emphasized the communication difficulties and lack of social adeptness of the children. This lack of social connectedness in the children described by Kanner and Asperger was not disintegrative, as Bleuler had observed with childhood schizophrenia, but instead never materialized (Frith).

In the 1990's, autism spectrum disorders (ASD) appeared as a recognized diagnostic category in the *International Statistical Classification of Diseases and Related Health Problems* (ICD-10; World Health Organization [WHO], 1992) and in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2000, *Diagnostic and Statistical Manual of-IV-TR,* 2000). Since that time the reported incidence of persons diagnosed with ASD has increased. The Centers for Disease Control and Prevention (CDC) estimate that as many as 500,000 people in the United States between the ages of birth and 21 years are diagnosed with an ASD. From 1994 until 2003, there has been a six-fold increase in the number of students classified as having an ASD (CDC, 2006). The increase in the number of individuals identified with characteristics that place them in the diagnostic category of autism has also led to an increased awareness of the disorder and its effects, not only on the individual's development but also on the families of children with an ASD.

Stress in Families with Children with an Autism Spectrum Disorder

Parents of children with disabilities report higher levels of stress than parents of typical functioning children. Multiple reasons for the stress have been investigated including: the grief of losing one's child or more specifically losing the expectations for one's child; the added time that must be devoted to the care of a child with a disability; the restrictions of being able to take a child into public places; and the added financial and medical burdens placed on the family (Baker-Ericzen, Brookman-Frazee, & Stahme, 2005; Bebko, Konstantareas, & Springer, 1987; Dumas, Wolf, Fisman, & Culligan, 1991;

Heiman, 2002; Wolf, Noh, Fisman, & Speechley, 1989). Despite all of these known stressors, to date there have been few studies investigating the stress that may arise from differing personality types between a parent and their child.

Studies on Personality Types

Carl Jung investigated personality traits that he considered inborn characteristics. According to Jung (as cited in deLaszlo, 1959), these traits are relatively stable across the individual's life and become more pronounced as a person develops. For Jung, these characteristics make up the individual's personality type. Individuals with similar types tend to have similar and predictable ways of taking in information, processing that information and communicating. Conversely, different personality types have different ways of interacting. These personality types help predict how individual's behavior manifests in reaction to others in the environment and to situations (deLaszlo).

Isabel Myers expanded on the work of Jung and created a personality inventory, the Myers-Briggs Type Indicator, designed to differentiate personality types among individuals (Myers, 1998). Her work has been used in multiple settings to help people learn to better communicate with and understand each other. Myers utilizes the premise that by understanding the individual's personality type, one will better understand the person. Through this better understanding, the stress that accompanies misunderstandings will be lessened and relationships improved.

In 1996, Oakland, Glutting, and Horton developed an instrument to help identify personality types in children using the same type conceptualizations as Jung and later

Myers. These "types" are referred to as learning styles. The Student Styles Questionnaire has been used to help teachers and parents better understand their child's preferred learning style. It is purported that by better understanding a child's preferred style, the learning environment can be manipulated in a way to better accommodate the individual child. Equipped with a better understanding of the whole child, the classroom teacher can capitalize on the child's preferred communication style when interacting with the child (Faulkner, 2002; Oakland et al.). This better understanding may lead to decreased stress experienced by the teacher when dealing with the child.

Summary

Parents who attribute their child's behavior to a disability, as opposed to natural personality tendencies, may feel helpless and hopeless in their ability to transmit the typical societal rules and expectations thus heightening the stress they feel as a parent (Woolfson, 2004). Such parents may tend to over generalize the effects of the child's impairment inaccurately attributing the cause of problems to the impairment as opposed to the personality characteristics of the child. Helping parents to understand how their own unique personality type conflicts or meshes with the personality type of their child may help the parent to redefine the cause of conflicts from the disability to the personality. This may give parents a better way to communicate with and understand their child as a unique individual as opposed to a "disability". By recognizing and capitalizing on the individual preferences of the child, the parent may feel more adept at encouraging their child with disabilities to develop "independence, self-confidence and a

sense of worth" (Woolfson, p. 10) promoting the child to become an autonomous, independent and successful adult.

Purpose

The purpose of this study was to investigate how individual personality types affect the relationships between parents and their children when their child has been diagnosed with an ASD. Specifically, the aim of this study was to determine if the mismatch between specific personality types, as originally conceptualized by Carl Jung (as cited by deLaszlo, 1959), heightened the reported stress experienced by parents in their role as parents.

Hypotheses

Results from the original ASD group assessment battery and the matched comparison group measures were compiled to allow for statistical analyses. Outcome data was used to provide information to address the proposed hypotheses.

H_1: It is hypothesized that parents of children without an ASD will report less stress than parents of children with an ASD.

H_2: It is hypothesized that mothers will report greater parenting stress than fathers from the ASD group and the matched control group.

H_3: It is hypothesized that parents who match their child for extraversion/introversion type preference will report less stress than parents who do not match.

H_4: It is hypothesized that parents who match their child for sensing (child practical)/intuition (child imaginative) type preference will report less stress than parents who do not match.

H_5: It is hypothesized that parents who match their child for thinking/feeling type preference will report less stress than parents who do not match.

H_6: It is hypothesized that parents who match their child for judging (child organized)/perceiving (child flexible) type preference will report less stress than parents who do not match.

Definitions of Terms

Autism Terminology

High Functioning Autism – individuals with a diagnosis of an autism spectrum disorder with an average to above average cognitive level

Asperger's Disorder – an autism spectrum disorder distinguished from autism by typical language acquisition

Pervasive Developmental Disorder – an autism spectrum disorder in which the symptoms are not pronounced to the degree to be diagnosed with autism or Asperger's Disorder

Neurotypical – individuals without a clinical or educational disability diagnosis

Psychological Type Terminology

Personality Type - personality traits considered inborn characteristics that are relatively stable across an individual's life and become more pronounced as a person develops resulting in similar and predictable ways of taking in information, processing that information and communicating which help predict how individual's behavior manifests in reaction to others in the environment and to situations

Myers-Briggs Type Indicator - a personality inventory, developed by Isabel Myers, designed to differentiate personality types among individuals

Student Styles Questionnaire - an instrument developed by Oakland, Glutting, and Horton to help identify personality types in children using the same type conceptualizations as Jung, and later Myers. These "types" are referred to as learning styles

Parenting Stress Index (3rd ed.) - Short Form (PSI/SF) - a paper and pencil instrument in a forced choice format written at approximately a fifth grade reading level consisting of 36 items selected from the original PSI with the Total Stress score intended to indicate the overall level of parent stress experienced by the individual parent

Stress Index for Parents of Adolescents (SIPA) - a pen and pencil instrument that contains 112 items written at a fifth-grade reading level designed to be used with biological, adoptive, or foster parents of children aged 11 to 19 years with the Index of Total Stress (TS) designed to measure the total stress a parent is experiencing in relation to parenting a specific adolescent

CHAPTER II

LITERATURE REVIEW

The following chapter will serve to introduce the diagnostic criteria for autism spectrum disorders, prevalence, and current research available regarding the expression of those traits. In addition, current literature will be reviewed regarding personality type and reported parent stress.

Autism Spectrum Disorders

The prevalence of children diagnosed with autism spectrum disorders (ASD) is increasing. In 2002, the Center for Disease Control and Prevention (CDC) conducted a prevalence study. In 14 surveyed communities, it was estimated that an average of 6.6 out of 1000 children fell under this category of disabilities. ASD appears to affect males more than females with rates four to five times higher in males (*DSM-IV-TR*, 2000). There also appears to be a genetic predisposition to the development of ASD as indicated by its prevalence among siblings. Approximately 5% of siblings of individuals with ASD also exhibit the disorder (*DSM-IV-TR*).

The *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition Text Revision* (*DSM-IV-TR*; APA, 2000) defines Autistic Disorder as a disorder with "the presence of markedly abnormal or impaired development in social interaction and communication and a markedly restricted repertoire of activity and interests" (p. 70). This impairment in communication presents as marked and sustained affecting both verbal and

nonverbal communication. Children diagnosed with ASD typically do not engage in simple imitation games or routines of infancy and early childhood or do so out of context or in a mechanical way. They tend to have restricted, repetitive, and stereotyped patterns of behavior, interests, and activities (*DSM-IV-TR*).

High Functioning Autism and Asperger's Disorder

Individuals diagnosed with ASD may fall anywhere along a continuum of intellectual functioning from exhibiting comorbid severe mental retardation to above average functioning. Individuals are classified as having high functioning autism (HFA) if their intellectual functioning is reported as average to above average (Zager, 2005). These individuals typically exhibit uneven cognitive development with verbal skills typically weaker than nonverbal skills (DSM-IV-TR, 2000).

Asperger's Disorder (AD) shares many characteristics with autism. Children with Asperger's Disorder display a significant lack of social understanding and reciprocity (DSM-IV-TR, 2000). Interactions are often one-sided with little or no consideration of the interests or perceptions of others. These interactions may seem awkward in their delivery and lacking in fluidity. This impairment in social propriety may result in the individual with AD becoming socially isolated (Zager, 2005). Individuals with AD also exhibit a lack of understanding of nonverbal social cues, social intent, the depth and range of feeling states, and the emotional impact that their actions and statements can have on others (Zager). Children diagnosed with AD tend to have a high preponderance of preoccupying interests that generally are unique and highly specialized with

knowledge being pursued for its factual content as opposed to its social purpose (Zager). Generally, children with AD tend to exhibit more instances of disruptive behavior, anxiety, and problems with social interactions than children diagnosed with HFA (Zager).

Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) is used to describe individuals who possess similar traits as those diagnosed with an ASD but do not meet the criteria for a specific Pervasive Developmental disorder fall under this category. These individuals have significant impairment in communication skills, lack reciprocal social skills, and may engage in stereotypic behavior. They may have average cognitive ability or impaired cognitive ability (DSM-IV-TR, 2000).

Possible Biological Connection to Autism

Studies have shown that more than 68% of families with a child diagnosed with high-functioning autism also had a relative (first or second degree) with a mild form of autism (Delong & Dwyer, 1988). It has also been reported that parents of children with autism, particularly fathers, exhibit similar autistic tendencies such as visual thinking, or pursuing an interest single-mindedly, and are likely to have poor social skills (Grandin, 1998). It would seem logical that biological parents would share some or many of the characteristics present in their children with ASD. These may present in more subtle ways than the criteria that defines the specific pervasive developmental disorder. Because of the implied shared characteristics, it would appear that parents may exhibit similar, though not as pronounced, manners of interacting with stimulus in the environment and in social situations.

Researchers have indicated the probable presence of a broad autism phenotype (Piven, 1999). Some of the general characteristics associated with autism have been shown to be prevalent in first-degree relatives of children identified with autism. These characteristics may not appear to the extent that a diagnosis can be made, but the individual may act in similar manners as a person identified with autism. Such personality characteristics include a rigid and aloof personality and language abnormalities (Piven).

The presence of these personality characteristics can be found in the original work of Leo Kanner (1943). Kanner found that some of the parents of autistic children were described as serious minded individuals with perfectionist tendencies and seemed to lack an interest in developing a relationship with others. While Kanner inappropriately used these personality traits to fault parents for their child's autism, his observation of similar personality traits between children with autism and their parents appears to be a valid indication of a possible genetic component for autism (Piven, 1999).

Piven (1999) also found that some parents of children with autistic consistently reported significantly higher levels than controls on social personality characteristics such as being aloof, untactful, and undemonstrative of emotions. They also reported higher rates of being withdrawn, demonstrating such traits as being shy or aloof and anxious, and overly sensitive to criticism. Elevated rigidity was also reported. Piven continues to indicate that professionals dealing with families with a child identified with ASD may better communicate and be effective in working with families when they take these

personality traits into account. He makes the point that these characteristics should be interpreted as personality traits rather than deliberate behavior by a parent who is being difficult or making demands.

Parenting Stress

Experiencing stress is a typical part of any relationship. The family relationship is no exception. Most parents undergo stress as they raise their children. Stress has been considered a strong determining component of parenting behaviors (Joshi & Gutierrez, 2006). This stress can help to heighten a parent's awareness regarding their parenting interactions and prompt them to maximize their available resources both physically and emotionally (Abidin, 1992). There is also a point at which exceedingly low levels of parental stress can lead to ineffectual parenting as a result of not being in tune with the child and their needs. Parents may disengage and not pick up on the child's signals or needs and may not respond accordingly (Abidin).

Abidin (1992) views the stress experienced by the parent as resulting from their self-image as a parent and the resources they have available. Parents' self-image results from their personal history and encompasses both self-goals and expectations of others. A parent's personality traits or types and how they have processed the events in their lives may influence how they interpret their history and form expectations of others (Abidin). These expectations include those for their child. How the child is viewed as meeting expectations or supporting the parent's personal image of self as parent may be impacted by characteristics of the child. These characteristics may entail physical or intellectual

traits and may also be impacted by the interplay between the parent's personality type and that of their child (Abidin).

When parents feel they have adequate resources to meet the challenges presented by raising a child with a disability they tend to report lower levels of stress (Knussen & Sloper, 1992). Providing parents with a variety of interventions from which to choose may help to alleviate their perceived stress. The number of strategies the parent has in their repertoire, and the flexibility to choose, appears more important than which strategy the parent uses (Knussen & Sloper). Practical strategies rather than emotional based strategies tend to show a more positive outcome. For parents that think the child's disorder can be improved by interventions, stressful events may be reframed as surmountable challenges. Knussen and Sloper suggest that "interventions which help parents to interpret the child's behavior in different ways and which focus on the parent-child interaction would be indicated" to help empower parents (p. 152).

The addition of a child to a family system inevitably increases family stress due to a change in routine and available resources including time and emotional commitment (Baker-Ericzen, Brookman-Frazee, & Heiman, 2002; Bebko, Konstantareas, & Springer, 1987; Dumas, Wolf, Fisman, & Culligan., 1991). Having a child with a disability may heighten the stress as it further taxes routines and resources. Some studies have indicated that parents may initially respond to the diagnosis of a disability in a similar way as grief (Ello & Donovan, 2005). This grief stems from the loss of the idealized child. This loss may be further impacted when the child fails to develop typical communication skills at

the anticipated developmental stage. Bebko et al. (1987) report this negative stress can impact a variety of relationships both within and outside of the immediate family. Stress has been shown to be a significant factor in parents of children with different types of disabilities including cognitive, behavioral, or emotional.

Parenting a Child with a Disability

For many parents, the acceptance of their child having a disability is difficult. The type of disability seems to not only impact the parents' acceptance of the disability label but also the perceived support from others. There is conflicting research regarding the degree of experienced stress and the causes for that stress (Baker-Ericzen et al., 2002; Bebko et al., 1987; Dumas et al., 1991). No research could be found regarding the possibility that at least some of the stress experienced is a result of a difference in the personality type of the parent and the child rather than other possible stressors associated with raising a child with a disability.

How a parent views their child's disability impacts how that parent processes the difficulties faced when raising the child. In 2004, Woolfson conducted a theoretical study to investigate the effects of parental perceptions of their child's disability on their stress level. The study investigated perspectives from a social model of disability and psychological research to produce a new psychosocial model of disability-related child behavior problems. It has been shown that in comparison to parents of non-disabled children, parents of disabled children report greater levels of stress and experience additional stress as related to their child's disability (Woolfson).

Studies on Children with Autism Spectrum Disorder and their Parents

Akkok, Askar, and Karanci (1996) found that how parents attribute the cause of the child's disability affects the level of stress they experience in parenting the child. Parents who attribute a negative outcome to internal causal attributes, such as personal characteristics that can be changed, tend to show better levels of coping than parents who attribute outcomes to external causal attributes such as luck (Akkok et al.).

Other studies have reported that maternal adjustment is not related to the nature nor severity of the child's impairment (Woolfson, 2004). Helping parents "normalize" their interactions with their child may help reframe some of the difficulties encountered while raising a child with a disability. This reframing of a child's personality may allow the parent to view the problems they face with their child as more typical of those encountered by parents of a non-disabled child at that developmental stage (Woolfson).

Dumas et al. (1991) reported that parents of children with ASD or behavior disorders attained scores in the clinical range on a measure of parental stress child domain, and that mothers of children with ASD reported more stress on the parent domain. Further analysis revealed that this increased stress appeared in the child domain, but not the parent domain, indicating it is the individual characteristics of the child, not the parents' sense of inadequacy, that produced the stress. This suggests that parents' perception that their child with ASD is different than other children probably represents a reflection of the actual differences in child behavior rather than simply the perception or the challenges associated with the presence of a disability (Dumas et al.). Baker-Ericzen

et al. (2005) found that parents of children with ASD reported higher levels of stress than did parents of typically developing children on both the child domain and the parent domain.

When looking at the reasons for reported maternal stress, Dumas et al. (1991) found that it was the individual characteristics of the child that created the greatest stress for mothers of hyperactive children. Additionally, Korn et al. (1978) were cited by Dumas et al. as reporting individual characteristics of children with disabilities as the source for both marital discord and difficulties in family life.

Weaver (2005) continues the concept set forth by Norton (1983) and Allport (1937) that the "essence of one's personality emerges from and is refined through communication interactions with others" (p. 59). In a study comparing the communication styles of Hans Eysenck's "Big Three" personality model, developed in 1947 and revised in 1990, Weaver found that those identified as endorsing a personality style that perceives the world as "threatening, problematic, and distressing" (p. 61) desired the company of others while experiencing distress at that company at the same time. These individuals tended to be more susceptible to stress than other communicator styles. They tend to become entangled in a cycle of miscommunication with others creating stress and apprehension. As they realize they are not able to effectively communicate, their frustration increases. This might in turn result in "considerable cognitive distraction further diminishing [their] communication performance" (Weaver, p. 67).

Knussen and Sloper (1992), in a review of parental stress risk factors and coping mechanisms, found that parents utilize a variety of interpretive and coping strategies to deal with their child's identified disability. Parents have the opportunity to view their child in a variety of contexts and therefore may be able to better focus on the strengths of the child. Those parents who identify the child primarily, not the disability, tend to have a more positive view of their child and of their options for success. Knussen and Sloper indicate that this more child-centered view allows the parent to move beyond the negative and stigmatized view often held by both professionals and the public.

Knussen and Sloper (1992) also investigated parental coping as it relates to parents' ability to adapt. They found that parents who tended to approach stressful situations from a practical or problem-solving framework tended to report significantly less stress than those parents who approached problems from a predominately emotion-focused viewpoint. This could indicate that parent personality type, whether they tend to focus on emotions or focus on the practical, affects how the parent both interprets stressful events, such as a child's disability or typical child independence striving, and how the parent reacts to those events. This may lead to an increase in reported stress for parents who tend to prefer emotions or to a conflict between the parents and the child as their personality types conflict. A parent who focuses on the rational may not understand the other parent's emotional reaction and may not be able to offer support without understanding the different viewpoint of the other. Equally, a parent may not understand

the child's lack of emotionality when discussing possible stressful events to the parent (Knussen & Sloper).

Wilder, Axelsson, and Granlund (2004), state that "a child develops at an optimal rate when environmental demands and expectations are synchronized with the individual's capacities, abilities, motivations, and temperament" (p. 1314). Further, they add that how the parent perceives their interaction with their child may be influenced by the child's characteristics. When one is interpreting emotional expressions, these must be connected to context and the person's typical pattern of expressions.

In a study comparing families with children aged 2-10 years with profound multiple disabilities, families with normally functioning infants aged 4-16 months, and families with normally functioning children aged 2-10 years, Wilder et al. (2004) found that parents were not looking for ideal interactions, but were instead wanting to "improve the interaction they had with their children in a similar way" (p. 1317). Parents, regardless of group, desired for their children to better understand them. The authors suggest providing interventions that are focused on improving mutually appealing parent-child interaction (Wilder et al.).

Communication

Researchers have investigated the ways in which individual child characteristics and parent characteristics affect communicative interactions. Kashinath, Woods, and Goldstein (2006) investigated how changing parental interaction style could enhance parents' use of other teaching strategies with their child with ASD. They cite that other

studies have looked at implementing communication strategies but have not documented the parental interaction style or effectiveness prior to the intervention. By using parent-focused interventions throughout the day in naturalistic settings, parent stress has been decreased. Additionally, this use of naturalistic-based interventions has increased child communication.

Kashinath et al. (2006) recommend providing parents with interventions that support positive communication outcomes for the child as an effective method. Helping parents to understand both their own personality style and that of the child will likely benefit the communication effectiveness of the parent. This understanding of styles can build the parent's intervention repertoire as well as allow the parent to more effectively communicate with the child when utilizing other intervention strategies.

Family functioning may be positively or negatively affected by the individual members' ability to understand and communicate with each other. Improved communication patterns amongst family members has been implied in members being able to discuss challenges being faced and available options for solutions, thus leading to greater cohesion and flexibility in the family system (Hultquist, 2002). For families with members identified with disabilities, it would appear important for the family to function in a healthy fashion and to deal with the member as an individual separate from the identified disability.

Abelman suggests that parental actions, such as discipline and the way in which a parent interacts with the child, are affected by the "nature of the child" (1991, p. 24).

Parents of high achieving children tend to be more open and clear in their communication than those of lesser achieving or learning disabled children. It is not clear if this affects the child's communicative effectiveness or is affected by it. Learning disabled children do tend to be less effective communicators than non-labeled children (Abelman).

Green (1990) also investigated the effects of family communication. He studied communication deviance or fragmented and unclear communication and its relation to children identified as learning disabled. He found a significant relationship between parental communication deviance and the child's learning disability. Families in which both the parent and the child may have inherited traits, such as information processing or attention difficulties manifesting as communication deviances, may be at heightened risk for communication deviance. This communication deviance may affect the child's ability to benefit from the parent naming and explaining. Green cites that effort has been made in educating teachers to improve communication organization and structure but that little has been done in regards to parent training even though the home is the primary learning environment.

Children with ASD benefit from a "high level of adapted parental communication which is specifically focused at the fine detail of interaction" (Aldred, Green, & Adams, 2004, p. 1421). Additionally, "repairing the communicative interaction seems to enable parents to establish a positive cycle of more effective communication and reciprocal enjoyment" (Aldred et al., p. 1427). It is possible that improving communication may lead to better social competencies and fewer behavioral or emotional problems.

Personality Types

Parents of children with disabilities face challenges when interacting, communicating, and finding common interests to explore. Parents may experience particular difficulties with their children if they have opposing personality types. It may appear easier for the parent to attribute difficulties to the diagnosis or disability rather than to the personality of the child independent of the characteristics of the disability. Parents and children with opposing personality types may report higher levels of dysfunction within the family system than parents of children with similar personality types.

In 1967, Bettelheim proposed that these naturally occurring differences in personality between a parent and child could also have a larger impact in the course of ASD. He elaborated that a child out of synch with a parent might experience difficulty understanding feedback from the parent (Bettelheim). Crain (2000) explained the phenomenological orientation of Bettelheim's work. To summarize Crain, this means learning to leave our preconceptions about how others think and trying to understand their unique perceptions or learning to understand another's point of view while suspending one's own is crucial. This may present extra challenges when trying to understand the way in which a child with autism perceives the external world, one that most people without disabilities have become attuned to without effort (Crain).

The ways in which an individual interacts with their environment and with others appears to be dictated by certain predispositions that exist within that individual.

Professionals and others have attempted to explain human behavior in a variety of ways since the beginning of time. According to Goldsmith et al. (1987), behavior can be thought of as the observable output of an individual based on underlying thought mechanisms. These thought mechanisms may be a result of inborn characteristics and is thought to be the case for individuals identified as having autistic tendencies similar to those traits observed by Kanner and Asperger. These innate characteristics mediate the way an individual receives, processes, and puts forth information from the environment. The behavioral output as a function of certain innate characteristics and the development of those characteristics make up the apparent personality or temperament of the individual. There has been considerable debate and little consensus regarding the actual definition of temperament and the nuances that define an individual (Goldsmith et al.).

The concept of personality type is directly related to temperament. The temperament of an individual refers to "consistencies that can be observed in people's attitudes, preferences, affect, and styles of behaving" (Benson, 2005, p. 4). There is some agreement on the basic concepts of what constitutes temperament. Temperament is thought to be a relatively stable trait with a biological basis in that it is apparent from infancy (Benson, 2005; Goldsmith et al., 1987). However, environmental influences may determine how the temperament both develops and is expressed as the child matures. It is important to note that no behavior exists in a vacuum but is the response of an individual in a given environmental context and the interpretation of that behavior made by others. The child is likely to fall back to temperament-based actions when faced with novel

situations and changing environmental demands and coping skills are taxed (Goldsmith et al.). For children with ASD, the difficulty of generalizing behavioral responses makes many situations both novel and demanding. Therefore, they are likely to respond in many situations in their fundamental temperamental style.

In the 1950s, Carl Jung proposed that individuals are born with inherent personality types. These typologies drive perception and communication. Jung indicated that these preferences are apparent in children's earliest years pointing to the infant's preferences as in-born characteristics. He indicates these personality types to be independent of parental regard under normal circumstances, not referring to extremes of parental attachment (de Laszlo, 1959).

Jung observed that if people's minds are active, they are involved in either taking in information, *perceiving,* or organizing that information and coming to conclusions, *judging* (Myers, 1998). He further differentiated two opposing ways in which people perceive; *sensation* and *intuition.* The way people judge was also differentiated into similar opposing ways, *thinking* and *feeling* (Myers).

Jung further observed that individuals seem to focus their energy and receive energy more by either the external world of people, experience, and activity or by the internal world of ideas, memories, and emotions. He referred to these two energy orientations as *extraversion* (preferring the external world) or *introversion* (preferring the internal world; Myers, 1998).

Each of the four mental processes, sensation, intuition, thinking, and feeling, have their own predictable characteristics and also takes on a different nuance depending on the focus of the individual (i.e., extroverted or introverted; Myers, 1998). Jung proposed eight fundamental patterns of mental activity for people by combining the four mental processes with the different orientations to the world (Myers).

Jung believed that all of the eight mental processes are available to and used by everyone. However, people vary innately in what they prefer (Myers, 1998). Everyone has the capacity to utilize functions that are non-preferred but tend to feel stressed when relying on non-dominant functions (de Laszlo, 1959). Therefore, individuals are likely to function in their natural preference. This leads to developing and most often using preferred functions, which creates fundamental differences between people (Myers). According to Myers, this also results in predictable patterns of behavior to form psychological types.

Understanding psychological type can provide a means to understanding how individuals interact with others including their family (Hultquist, 2002). Psychological type can help people understand both themselves and others. Persons who share psychological type tend to share similar interests, preferred methods of interacting with others, and communication styles. In contrast, persons with opposing types may find it difficult to understand and communicate with each other. This lack of understanding may lead to dissatisfaction and possible conflict between family members (Hultquist).

A person's perception of their environment and significant persons within that environment is highly affected by their personality type. Specifically, the communication between individuals is significantly affected by their type. People who live together may misunderstand the reactions of each other when their types are not matched. They may "talk past one another" or see the other as "less intelligent" as a result of not seeing the "gifts of another type" (McCaulley, 2000, p. 129). This lack of empathy for one another may lead to tension and misunderstanding among family members. A parent's perception of their child and how that child functions is affected by their own personality type and its match or mismatch with their child. Empowering a parent to understand the interaction of their own personality type and their child's personality type may help to facilitate the understanding and communication between them. This may help to reduce the stress parents experience when dealing with their child with disabilities.

Goodness of Fit

Thomas and Chess postulated the goodness of fit model in 1977 as an attempt to define the relation between temperament and context. According to the model, the differing environments in which a child functions are characterized by not only the demands of the setting but also by the demands and expectations of the individuals controlling that environment. For children, the primary controlling individual is typically the parent. As the child enters school, the primary controlling individual in that setting becomes the teacher. The child's ability to appropriately meet the demands of the setting affects their ability to function well in that environment. Some children are better able to

moderate their behavior based on the feedback they receive while others have difficulty changing their repertoire. Children with high functioning autism may experience greater difficulty adapting to demands. They may not be able to benefit from feedback from controlling individuals or may not be able to adequately change their apparent temperament or personality type to match expectations (Feagan, Merriwether, & Haldone, 1991).

The concept of goodness of fit explores the interaction of an individual child with their environment. It reflects an ecological systems approach that recognizes that characteristics associated with a child affect how they are perceived in specific settings (Feagan et al., 1991). In cases where the demands and expectations within that setting are similar to characteristics within the child, a functional goodness of fit ensues. However, when there is a mismatch between child characteristics and setting demands, the goodness of fit begins to unravel. Feagan et al. use the terminology "high goodness of fit" and "low goodness of fit" to describe the different situations respectively. Research has shown support for high goodness of fit at home being positively correlated with school achievement outcomes as well as classroom behavior (Feagan et al.). These findings were evident with typically functioning children as well as children identified with a learning disability. Interestingly, they found that these outcomes remained consistent over a five-year period. Lerner, Lerner, and Zabski (1985) found similar results.

The concept of goodness of fit, an exploration of how well temperament characteristics fit between a parent and their child, may illuminate potential causes of

stress experienced by the parent when raising their child. A parent will likely perceive children with similar personality characteristics as less stressful than children whose characteristics are dissimilar. Children with similar characteristics as their parent will experience high goodness of fit within the home and may then function better both within the home and within the school setting.

Chess and Thomas (1992) indicate the individual differences in children and their parents are what influence the goodness or poorness of fit. Children who experience a poor fit within the family system or with their parents may be at risk for developmental difficulties. According to Chess and Thomas, parents may feel that it is the fault of the child or themselves that create the poor interactional process when there is a poor fit. The child may not be able to meet parental expectations due to his or her own or the parents' individual temperament. The parents' ability, or lack of ability, to communicate with the child may cause them to feel unable to affect the child's behavior, which results in further breakdown in communication. By utilizing parental guidance, positive outcomes have been achieved with varied parent personalities and child temperament characteristics (Chess & Thomas).

Helping parents to understand some of the reasons for a low goodness of fit with their child could encourage them to work to adjust and accommodate for the child, thus improving the goodness of fit. Keough (2005) suggests that utilizing the idea of goodness of fit can assist parents in creating a framework to help understand how family relationships are affected by temperament. In discussing children with learning

disabilities, she states that the child's temperament characteristics are assumed to be part of the disability itself rather than the individuality of the child. By reframing the "child's behavior through a temperament 'lens' it helps" one to distinguish what are signs of the disability and what are signs of temperament (Keough, 2005, p.3). By making accommodations for the child to support his or her individual temperament type, a parent may be better able to reduce stress in daily activities (Keough).

Parents also differ in their individual temperaments, which can affect how they interact with their child and the expectations they have regarding the child's behavior (Keough, 1991). By understanding their own temperament or personality type and the general characteristics associated with that type, they can better adjust their way of interacting with their child to more effectively accommodate and support their child (Keough).

Hypotheses

Results from the original ASD group assessment battery and the matched comparison group measures were compiled to allow for statistical analyses. Outcome data was used to provide information to address the proposed hypotheses.

H_1: It is hypothesized that parents of children without an ASD will report less stress than parents of children with an ASD.

H_2: It is hypothesized that mothers will report greater parenting stress than fathers from the ASD group and the matched control group.

H_3: It is hypothesized that parents who match their child for extraversion/introversion type preference will report less stress than parents who do not match.

H_4: It is hypothesized that parents who match their child for sensing (child practical)/intuition (child imaginative) type preference will report less stress than parents who do not match.

H_5: It is hypothesized that parents who match their child for thinking/feeling type preference will report less stress than parents who do not match.

H_6: It is hypothesized that parents who match their child for judging (child organized)/perceiving (child flexible) type preference will report less stress than parents who do not match.

Summary

Though the general characteristics associated with ASD may present a picture of how a person with ASD may appear to others, these characteristics do not negate the presence of individual personality traits that can be considered to make up the person's personality type. Recognition of the child's individuality can help parents to understand some child characteristics are personality-centered rather than disability-centered. Relatives of children identified with ASD may share similar traits, which may affect their ability to effectively moderate their own communication with their child. Families with members with disabilities have been shown to demonstrate more stress than families with typically functioning children. This stress may be the result of multiple factors.

Parents who attribute the child's disability to attributes over which they have control tend to report less stress than parents who attribute the cause of the disability to things such as fate. Parents realizing they can affect their child's behavior beyond the disability will allow them to attribute behavior to the individual child not an unchangeable characteristics associated with the disability. Heightening parent's ability to communicate with and understand their child will likely increase their ability to effectively implement already existing interventions.

Some children easily meet parental expectations and environmental demands, whereas some children tend to clash. Children whose individual personality type is different than their parent may clash with both environmental and parental expectations. When parents understand traits commonly associated with either their own or their child's, personality type and how those can be accommodated, a better fit between expectations and behavior may be possible. This better fit can affect the child both at home and at school. Communication can be increased and situations can be manipulated to help the child transition, thus alleviating parental stress.

Previous research has indicated that parents of children with disabilities experience varied levels of stress that can be attributed to different causes. How a parent attributes the causes for that stress can affect how they handle it. Studies have also shown that parents whose children do not easily fit with their own expectations as a parent or with environmental demands experience difficulty communicating with their child. This

heightens the stress they feel while raising the child and changing environments, such as the shift between expectations at home and school.

Communication has been shown to be an area of difficulty for persons with ASD. Research has shown that the type and effectiveness of communication between parent and child affects the child's subsequent ability to communicate which may contribute to a cycle of miscommunication between the parent and the child. The concept of personality type has been used in different settings to increase communication effectiveness among individuals by raising the awareness of each party of the others' communication style and strengths. Persons with different personality types may experience a breakdown in communication thus creating potential stress in the relationship.

This study investigated the reported stress of parents of children diagnosed with high functioning autism (HFA), Asperger's Disorder (AD), or Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) in regards to their interactions with that child. Specifically, this study compared the levels of stress experienced by parents while raising their child with ASD in relation to the similarity or dissimilarity of their reported personality types as indicated by measures of personality type. The hypotheses presented in this study are: whether parents of children with HFA, AD, or PDD-NOS report greater stress than parents of typically functioning children, whether mothers report more stress than fathers regarding raising their child, and whether parents and their children with HFA, AD, or PDD-NOS experience greater stress in raising that child when their personality types are dissimilar than when they are similar.

CHAPTER III

METHODOLOGY

The following chapter will serve to introduce the participants in the study and their recruitment. Assessments utilized and proposed method of analysis will also be discussed.

Participants

This study used archival data acquired by a research study conducted at a southern university. The goal of the original study was to determine best practices for the assessment of children and adolescents diagnosed with high-functioning autism spectrum disorders (ASD). Participants were previously diagnosed with high-functioning autism (HFA), Asperger's Disorder (AD), and Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS). Participants were solicited by placing announcements in local newspapers regarding the study as well as flyers distributed to local autism societies and at professional conferences. Participants were from northern Texas. Participation was voluntary with no incentives being offered beyond sharing of pertinent information gathered about the individual child with his or her parent. The study involved utilizing various instruments to assess different aspects of the child including: cognitive functioning, visual-motor ability, social preferences, and personality types. Parents of the participants completed developmental histories, behavior rating scales, parenting stress inventories, and assessments of their own personality types.

Child participants ranged in age from 8 to 18 years of age. Original diagnoses were made by licensed psychologists or physicians. An initial telephone interview with parents ensured the children met criteria for study participation and parents provided copies of original evaluation reports documenting their child's diagnosis.

For the purpose of the secondary smaller study, an additional matched comparison group of neurotypical children, those without a clinical or educational disability diagnosis, was used. The participants were matched for demographic characteristics including gender, age, and ethnicity. Participants for the matched comparison group were recruited using flyers and personal and professional connections. The matched comparison group consisted of children who had not been previously diagnosed with a learning disability or a mental health disorder. Children were required to be in regular education classes. Parents were asked to independently complete their measures.

Participants in the matched comparison group were asked to complete only the measures pertinent to this study. Parents completed a parent stress measure as it related to the child participant, as well as a measure of personality type. Children completed a measure designed to represent their preferred learning style. Children completed their measure in the company of a researcher to ensure understanding of the wording and intent of the measure.

Measures of Personality Type

Myers-Briggs Type Indicator

The parents of the children in both the ASD and the matched comparison group completed the Myers-Briggs Type Indicator (MBTI). The MBTI is widely used to help facilitate communication between individuals and is generally accepted as a viable instrument for reporting personality preferences in a variety of persons regardless of gender or education level. It has been utilized in marital, individual and family counseling, educational and career arenas, and consulting (McCaulley, 2000). McCaulley terms it a "powerful tool for bridging the [communication] gap, because it is based on basic differences in the ways human beings take in information and make decisions" (p. 117). The MBTI is based on Jung's theory of psychological type (Myers, McCaulley, Quenk, & Hammer, 2003). The premise behind the theory is that individual differences in behavior, which may appear random, can be structured and predictable due to variations in type (Myers et al.). Outcomes are based on a dichotomy and therefore do not indicate a degree of preference but instead identify a dominant function.

The original MBTI has undergone several revisions since its inception in 1942 with the 1998 revision (Form M) being the most recent. Revisions were utilized to keep abreast of increasing research and use of the instrument (Myers et al., 2003). Form M was used for this study and all subsequent referrals to the MBTI will refer to Form M. The 1998 revision of the MBTI was based on a stratified United States sample to reflect current population for gender and ethnicity; however, some ethnic categories were not

included (Myers et al.). The national norming sample that was collected in 1996 consisted of 3,009 individuals. In order to make the sample more representative of 1990 U.S. census data, a national representative sample (NRS) was developed. Gender and ethnicity were weighted and applied to the original national sample. This weighted NRS consisted of 1,450 persons.

The MBTI (Myers et al., 2003) contains 93 items written at a seventh-grade reading level. Answers are in a forced-choice format written to reflect a preference for each dichotomous scale. The MBTI can be scored to produce dichotomous scores along each dimension. These scores can then be combined to form four-letter types. For the purposes of this study, dichotomous scores were used due to limited sample size. Combining dominant functions with auxiliary functions can combine to form 16 different personality types. Each personality type can then be represented by a four-letter code, which indicates the preference for each dichotomy (Myers et al.).

Typical estimates of reliability for the MBTI are reported as high by Myers et al. (2003). For continuous scoring of the four MBTI scales, high levels of internal consistency, generally above .90, and acceptable levels of test-retest reliability between .83 and .97 are reported (Mastrangelo, 2001). Myers et al. report that in dichotomous scoring, the Form M shows better reliability than earlier versions whether computed for logical split-half, consecutive item split-half, or coefficient alpha. More specifically, the national normative sample produced internal consistency based on alpha coefficients for Form M for the individual dichotomies as follows: Extraversion (E)-Introversion (I) .91,

Sensing (S)-Intuition (N) .92, Thinking (T)-Feeling (F) .91, and Judging (J)-Perceiving (P) .92 for combined males and females. There were no significant differences for gender (Myers et al.).

Test-retest reliability was investigated with a smaller sample group consisting of 258 people taken from Public Utilities Company (Myers et al., 2003). After a four-week interval, participants' percentage of agreement ranged from .91 for E-I, .92 for S-N, .84 for T-F, and .89 for J-P (Myers et al.) producing an average of 65% identical preference reporting (Fleenor, 2007). Earlier studies based on previous versions of the MBTI have also shown similar consistency utilizing the instrument (Myers et al.). The MBTI has acceptable validity when using the dichotomous scales for the four personality dimensions (Mastrangelo, 2001). Myers (2003) cites studies by Johnson & Saunders, 1990 and Thompson & Borello, 1989 who utilized confirmatory factor analyses that support a four-factor model of the MBTI. Support was shown for the MBTI in regards to the four preference scales measuring component dichotomies and in correlation to other instruments purporting to measure similar constructs such as the Big Five Personality model (Myers et al., 2003).

Student Styles Questionnaire

The *Student Styles Questionnaire* (SSQ) was designed to provide information about how students "gain energy and direction, gather and integrate information, make decisions, and generally orient their lives" (Oakland, Glutting, & Horton, 1996, p. 1). The instrument was not designed to identify pathologies or learning deficiencies but instead to

promote a better understanding of how the individual student differences become apparent in "preferences, temperament, and personal styles" (Oakland et al., p. 1). Oakland et al. indicated that the SSQ can be utilized by others to promote tolerance and understanding of each individual's unique style and to capitalize on personal strengths.

The SSQ was published by the Psychological Corporation in 1996 and was authored by Thomas Oakland, Joseph Glutting, and Connie Horton. The SSQ is a paper and pencil questionnaire consisting of 69 brief questions, each with two alternative answers. It takes approximately 30 minutes to complete. It is designed for children ages 8 years to 17 years and is written on a reading level for children third grade and above. National standardization was based on a sample of 7,902 students aged 8 through 17 years utilizing a stratified design based on 1990 U. S. census information (Oakland et al., 1996). Stratification was based on age, sex, race/ethnicity, geographic region, and school type.

Questions on the SSQ are designed to explore an individual's behavior, reaction to different situations and preferred activities (Oakland et al., 1996). Each question consists of an incomplete statement that the respondent is asked to complete with one of the two possible endings. It is predicated on the Jungian temperament types of which there are four possible scales. Each of the four scales have two possible preferences: Extraversion/Introversion, Sensing/Intuiting, Thinking/Feeling, Judging/Perceiving. The premise of the SSQ is that "temperament results from an interaction between innate

biologically-coded qualities, environmental qualities, and individual...personal choices" (Faulkner, 2002, p. 89).

According to Faulkner (2002), the language of the SSQ was changed from that of the MBTI to reflect more common usage. For example, the MBTI "Sensing Type" has been renamed in the SSQ as "Practical Type," "Intuitive" was renamed as "Imaginative," "Judging" renamed as "Organized," and the "Perceiving Type" renamed as "Flexible Type." Similar to the MBTI, the SSQ yields 16 possible temperament or personality types, made up of a preference along each dichotomy (Faulkner).

The SSQ can be administered individually or in a group setting. For the current study, all administration was conducted individually. Child participants in this study were asked to independently complete the SSQ with a researcher present. If there were concerns regarding the child's ability to read and comprehend the questions or responses, the items were presented orally by a researcher.

Results of the SSQ are presented as *T* scores, which have a mean of 50 and a standard deviation of 10. Scores between 50 and 54 indicate a mild preference for a style (Oakland et al., 1996). Scores between 55 and 64 show moderate preferences, between 65 and 74 show strong preference, and above 74 show very strong preferences. Dichotomous preference scores are reported along four poles: Extroverted or Introverted (how one acquires energy), Practical or Imaginative (what one attends to), Thinking or Feeling (how one makes decisions), and Organized or Flexible (if one prefers to make a decision or remain open to input; Oakland et al.).

A review of the SSQ manual (Oakland et al., 1996) provided information regarding reliability, validity and scale content. Factor analysis for the various dichotomies yielded consistent loading for individual questions. Further, consistency across age groups with mean coefficients greater than .90 indicates the scales produce similar results across age groups. Student preferences may change as they get older or enter a new developmental level with the Extraversion-Introversion and the Organized-Flexible scales showing more change than the Practical-Imaginative or Thinking-Feeling scales (Oakland et al.). Additionally, some gender differences were apparent. Oakland et al. reported females in the standardization sample preferred a Feeling and Organized style while boys preferred a Thinking and Extroverted style. Both boys and girls preferred a Practical style over an Imaginative style.

Test-retest reliability for the SSQ was explored with a sample of 137 students completing the instrument a second time after a seven-month interval. Ranges for the test-retest reliability varied from .67 to .80 with an average of .74 resulting when a Fisher's *z* transformation was applied to the four scales (Oakland et al., 1996).

A study was conducted using a sample size of 99 students exploring the relationship between the MBTI and the SSQ (Oakland et al., 1996). In that both instruments purport to measure similar constructs, correlations were expected to support construct validity. Results indicated that there were strong correlations among scales measuring the same constructs and poor correlations among those measuring different constructs. Additionally, a joint canonical correlation analysis revealed statistically

significant relationships between the SSQ and the MBTI with a Wilks-Lambda = .299, $F(4,91) = 4.53$; $p < .001$ (Oakland et al.).

Measures of Parenting Stress

Parenting Stress Index (3rd ed.) - Short Form

Levels of parenting stress were assessed using the Parenting Stress Index (3rd ed.) Short Form (PSI/SF) that parents of the child participants were asked to complete. In filling out the PSI/SF, the parents were asked to consider their interactions specifically with their child who participated in the study if they had more than one child. The PSI/SF was designed to provide a shorter instrument than the full PSI. It is a paper and pencil instrument written at approximately a fifth grade reading level consisting of 36 items selected from the original PSI. Item responses are in a forced choice format. According to various factor-analytic studies, a three-factor solution was indicated as producing the most appropriate description of the data (Abidin, 1995). The three factors adopted were Maternal Esteem, Parent-Child Interaction, and Child Self-Regulation. According to Castaldi (1990), these three factors focus on the parent, the child, and their interactions and so reflect the main components of the parent-child system. These factors were labeled as Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child. The Total Stress score is intended to indicate the overall level of parent stress experienced by the individual parent (Abidin).

On the PSI/SF, scores are considered to be within a normal range of functioning if they fall between the 15th and the 85th percentile (Abidin, 1995). Scores above this range

are considered to be high. Scores that are extremely low should be examined in relation to the Defensive Responding Scale found within the instrument which provides an indication of the extent of bias with which a responder completed the measurement. Scores resulting in a raw score of 10 or less may indicate: (a) the person is attempting to appear more competent and free of emotional stress associated with parenting, (b) the parent is not experiencing stress because of a lack of investment in the child and their role as parent, or (c) the parent is very competent and handling the role of parent and the typical stress associated with it (Abidin).

The Total Stress score indicates the total amount of stress a parent is experiencing in direct relation to their role as a parent to the specified child (Abidin, 1995). It is not designed to incorporate stress related to other life roles or events. It reflects the stress associated with interactions with the child, stress that develops as a result of the child's behavioral characteristics, and personal parental distress. On this scale, raw scores higher than 90 indicate a clinically significant level of stress (Abidin).

Scores on the Parental Distress (PD) subscale reflects the stress a parent is feeling as a function of his or her role as a parent and personal factors involved in parenting (Abidin, 1995). An impaired sense of parenting competence, stresses reflecting restrictions imposed on other life roles, conflict with the other parent, limited social support, and depression are dimensions assessed by this subscale. If this subscale represents the parent's highest subscale elevation, the parent's personal adjustment

should be considered as a confound independent of their relationship with the child (Abidin).

The Parent-Child Dysfunctional Interaction (PCD-I) subscale represents how well the child is meeting the parent's expectations and whether the interactions with the child are reinforcing as a parent (Abidin, 1995). Parents who feel they are alienated from their child due to unsatisfactory interactions or who project a negative feeling in regard to their impact on the child's life will be represented by higher scores on this subscale. The parent-child bond may be weak or may have never been established (Abidin). Behavioral characteristics of the child are assessed by the Difficult Child (DC) subscale. These characteristics may reflect inherent temperament or learned behaviors. Included in the behaviors assessed are such things as defiance, noncompliance, and demanding behaviors (Abidin).

The professional manual for the PSI (Abidin, 1995) does not cite validity for the Short Form. It cites the validity of the PSI as high and suggests that it would be similar for the short-form as items are derived directly from the original full-length index. The full-length PSI correlated .94 with the PSI/SF for the Total Stress score. Patterns of correlations indicate that the Parent Domain (PD) subscale score was highly correlated with the PSI Parent Domain (r = .92). The Difficult Child (DC) subscale score was highly correlated with the Child Domain scale of the PSI (r = .87). The Parent Child Dysfunctional Interaction (P-CDI) contains items taken from the Child Domain and the

Parent Domain, which may explain its lower correlations of .73 with the Child Domain and .50 with the Parent Domain from the full length PSI (Abidin).

Reliability for the three scales is reported as good. The PD scale reports an alpha reliability of .87 and a test-retest reliability of .85. The P-CDI reports alpha of .80 and a test-retest reliability of .68, and the DC alpha was cited as .85 with the test-retest cited as .78. The Total Stress score reports an alpha reliability of .91 and a test-retest reliability of .84 (Abidin, 1995).

Stress Index for Parents of Adolescents

The Stress Index for Parents of Adolescents (SIPA) was developed as an upward extension of the PSI (Sheras, Abidin, & Konold, 1998). It was intended to take into account the typical stress endured by parents of adolescents and establish normative guidelines to help identify those parents who are experiencing stress that is not considered typical. The SIPA renders scores on three dimensions, the Adolescent Domain (AD), the Parent Domain (PD) and the Adolescent-Parent Relationship Domain (APRD). It also contains a Life Stressors (LS) scale, and an Index of Total Parenting Stress (TS). Within the AD there are four subscales: Moodiness/Emotional Lability (MEL), Social Isolation/Withdrawal (ISO), Delinquency/Antisocial (DEL), and Failure to Achieve or Persevere (ACH). The PD also contains four subscales: Life Restrictions (LFR), Relationship with Spouse/Partner (REL), Social Alienation (SOC) and Incompetence/Guilt (INC; Sheras et al., 1998).

The SIPA is a pen and pencil instrument that contains 112 items written at a fifth-grade reading level (Sheras et al., 1998). It is designed to be used with biological, adoptive, or foster parents of children aged 11 to 19 years. For the first 90 items, responses are in the form of a 5-point rating scale that ranges from Strongly Disagree to Strongly Agree. The final 22 items reflect the Life Stressors domain and are answered by circling Yes or No (Sheras et al.).

Scores on the SIPA are represented by percentile scores (Sheras et al., 1998). Percentile scores less than the 85th percentile are considered within normal limits, those ranging from the 85th to the 89th percentile are considered borderline, those from the 90th to the 94th percentile are considered clinically significant and those falling within the 95th to the 100th percentile are considered clinically severe. The borderline range represents elevated levels of stress but not to a degree that warrant clinical intervention (Sheras et al.).

The index of total stress. The Index of Total Stress (TS) was designed to measure the total stress a parent is experiencing in relation to parenting a specific adolescent. It is not intended to reflect the total stress a parent is experiencing from other sources in his or her life. The TS represents a compilation of all items across all domains and reflects the theoretical orientation that stressors are additive (Sheras et al., 1998).

The adolescent domain. The Adolescent Domain (AD) measures the stress felt by a parent due to specific characteristics of the adolescent (Sheras et al., 1998). Subscales include Moodiness/ Emotional Liability (MEL), Social Isolation/Withdrawal (ISO),

Delinquency/Antisocial (DEL), and Failure to Achieve or Persevere (ACH). According to literature and parental feedback these subscales constitute the areas of major stress for parents as a result of their adolescent's behavior. These ratings are based on the "parent's perceptions, expectations, hopes and concerns regarding his or her adolescent" (Sheras et al., p. 14) and not actual behaviors exhibited by the adolescent. Elevated scores on the AD indicate that the parent attributes parenting stress to characteristics of the adolescent. Elevated scores on this domain may indicate the parent's reactions to actual behavior exhibited by the adolescent may be due to a dysfunctional parent or be a "misperception of the behavior caused by projecting or assigning meaning and intentions that are not rationally or realistically justified" (Sheras et al., p. 15).

Parent domain. Within the Parent Domain (PD), there are fours subscales that reflect the stress a parent feels when interacting with their adolescent child. These include: Life Restrictions, Relationship with Spouse/Partner, Social Alienation, and Incompetence/Guilt. When the PD score is extremely elevated, the parent may feel weighed down with their responsibilities (Sheras et al., 1998).

Adolescent-parent relationship domain. The parents' perception of the quality of their relationship with the adolescent can be inferred from their scores on the Adolescent-Parent Relationship Domain (APRD) subscale. One's commitment to the relationship, understanding how each affects the other's behavior, and the interpretation of the other's behavior are all domains assessed by this subscale. Elevated scores on this subscale

indicate the relationship between parent and adolescent is neither close nor mutually supportive (Sheras et al, 1998).

The technical manual for the SIPA (Sheras et al., 1998) presents arguments for content validity due to the rational-empirical method used to develop the SIPA including literature review to assign variables commonly associated with parenting stress, expert and parent review of items, and statistical improvement based on a field test version (Jones, 2006). Convergent validity is presented as resulting from correlational studies with other known instruments. Significant relationships were found to support the measure and good construct validity was reported (Jones).

According to the technical manual (Sheras et al, 1998), all of the subscales resulted in alpha coefficients exceeding .80 with most ranging from the upper .80s to .90 for internal consistency. Test-retest reliability is reported as acceptable at the domain and the TS level, but not at the subscale level (Jones, 2006).

Comparisons can be made between scores obtained on the SIPA and the Parent Stress Index/ Short Form (PSI/SF). Using the domain scores of the SIPA allowed for comparisons with the PSI/SF, which yields similar domain scores. The Total Parenting Stress from the SIPA is comparable to the Total Stress from the PSI/SF. The Parent Domain of the SIPA measures similar constructs as the Parental Distress scale of the PSI/SF. The Adolescent Parent Relationship Domain of the SIPA assesses similar areas as the Parent-Child Dysfunctional Interaction of the PSI/SF and the Adolescent Domain of the SIPA can be compared to the Difficult Child scale of the PSI/SF.

Procedures

Parent and child dyads with an ASD, were asked to come to one of four designated testing sites on a Saturday. This study utilized select measures from a larger research endeavor. Children were administered cognitive and neuropsychological measures in addition to the SSQ. Parents were asked to complete the MBTI and PSI or SIPA depending on the child's age, as well as other measures while their child was being tested. All assessments for the children and the parent(s) were conducted during a one-day session if possible. For individuals unable to complete the assessment in one day, a second session was scheduled. Assessments and interviews were completed by masters- and doctoral-level psychology students. Testing was conducted in a one-on-one setting with minimal distractions. Breaks were provided as needed as well as an hour lunch break. For some parents, the MBTI was not included in the original assessment battery and was sent via traditional mail a few months after their original participation in the study. Telephone follow-up was utilized to increase participant response to the mailing.

For the smaller embedded study, a matched comparison group was utilized in addition to the autism spectrum disorder (ASD) group. Children and parents were recruited on a voluntary basis using flyers and personal and professional connections. The matched comparison group consisted of parent and child dyads of neurotypical children. Parents were asked to complete appropriate consent forms and children were asked to either give assent or consent depending on their age. Parents completed the MBTI and either the PSI or the SIPA depending on the age of their child. Children

completed the SSQ. If the child's reading level was estimated to be below third grade based on school grade placement, an evaluator read the measure to the child to ensure understanding. The matched comparison group was matched on child and parent gender, child age and ethnicity with the ASD group.

Hypotheses

Results from the original ASD group assessment battery were compiled and used to explore the relationship of parent stress and matching personality type in the main study. A smaller embedded study explored the difference in stress between parents of children with an ASD and those of non-diagnosed children and the difference in stress between mothers and fathers. For this smaller study, the matched comparison group data were combined with the data from the ASD group. Outcome data was used to provide information to address the proposed hypotheses.

H_1: It is hypothesized that parents of children without an ASD will report less stress than parents of children with an ASD.

H_2: It is hypothesized that mothers will report greater parenting stress than fathers from the ASD group and the matched control group.

H_3: It is hypothesized that parents who match their child for extraversion/introversion type preference will report less stress than parents who do not match.

H_4: It is hypothesized that parents who match their child for sensing (child practical)/intuition (child imaginative) type preference will report less stress than parents who do not match.

H_5: It is hypothesized that parents who match their child for thinking/feeling type preference will report less stress than parents who do not match.

H_6: It is hypothesized that parents who match their child for judging (child organized)/perceiving (child flexible) type preference will report less stress than parents who do not match.

Analyses

Results from the assessment battery were compiled and statistical analyses conducted. Descriptive statistics were conducted on the independent variables listed below to examine the potential interactions between the personality type of the parent-child dyads and reported parent stress.

Variables

Child Variables

Gender, age, personality type, and clinical diagnosis.

Parent Variables

Gender, personality type, and reported parenting stress.

Statistical Analysis Plan

Measures of central tendency, including means and standard deviations, and frequencies and percentages, were calculated to describe the sample on the various

independent and dependent variables. Crosstab analyses were conducted on the categorical parent demographic variables and on the categorical child demographic variables. Independent samples *t* tests and Mann-Whitney *U* were conducted to examine the relationship between parent and child personality types. Multivariate Analyses of Variance (MANOVA), and Independent Samples *t* tests were conducted to test for differences between the levels of categorical variables on the continuous dependent measures. Additional exploratory analyses were conducted using Pearson's product moment correlations.

CHAPTER IV

RESULTS

This chapter presents the findings from this study. The primary purpose of the study was to investigate the relationship of parent stress and the match or mismatch between personality types among parent-child dyads. Additional analyses explored the interaction of parent stress and parent gender as well as that between parent stress and child diagnosis. The descriptive data is presented in the first part of the chapter. The remaining chapter provides the results related to hypotheses testing. The chapter closes with exploratory analyses conducted on variables not directly related to hypotheses.

As the overall study is comprised of two smaller studies, hypotheses 1 and 2 were conducted using a sample made up of parents and children from both the ASD group and the matched comparison group. Descriptives and analyses performed on hypotheses 3 through 6 involved only those participants taken from the ASD group.

Sample Description

The sample for the current study included 83 children and their parents. Children were diagnosed with high functioning autism (HFA) (15.7%), Asperger's Disorder (AD) (44.6%), Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) (10.8%), or had no clinical diagnosis (28.9%). Child's diagnosis was recoded into children diagnosed with an Autism Spectrum Disorder (ASD; 71.1%) which included those with HFA, AD, and PDD-NOS and children that did not have a clinical diagnosis

(28.9%). Children not diagnosed with ASD were matched to children diagnosed with ASD on gender, age, and ethnicity. As shown in Table 1, most of the children diagnosed with ASD were male (86.4%) with only 13.6% being female. For children not diagnosed with ASD, 75.0% were male and 25.0% were female.

Table 1

Frequencies and Percentages for Categorical Demographic Variables by Child's Diagnosis

	Diagnosis		No Diagnosis	
	N	%	N	%
Child's Gender				
Male	51	86.4	18	75.0
Female	8	13.6	6	25.0
Ethnicity				
Caucasian	53	89.8	21	87.5
African-American	3	5.1	1	4.2
Hispanic	3	5.1	2	8.3
Age Category				
Child	37	62.7	13	54.2
Adolescent	22	37.3	11	45.8

The majority of the children diagnosed with ASD were Caucasian (89.8%). The remaining participants diagnosed with ASD were African American (5.1%) or Hispanic (5.1%). Similarly, the majority of the children not diagnosed with ASD were Caucasian (87.5%). The remaining participants not diagnosed with ASD were African American (4.2%) or Hispanic (8.3%). Due to the large proportion of Caucasian respondents, the researchers could not conduct analysis on ethnicity. Means and standard deviation for age can be found in Table 2. For children diagnosed with ASD the average age was 11.53 (SD = 2.93) years. Ages for children diagnosed with ASD ranged from eight to eighteen years. Children who were not diagnosed with ASD ranged in age from eight to seventeen with an average of 11.92 (SD = 2.62) years. In addition to being used as a continuous variable, age was also recoded as a dichotomous variable (childhood vs. adolescence) depending on the child's age. Participants age eight to twelve were coded as children. Participants thirteen or older were coded as adolescents. Most of the participants with ASD were coded as children (62.7%) and 37.3% were coded as adolescents. Similarly, the majority of the participants that were not diagnosed with ASD were coded as children (54.2%) and 45.8% were coded as adolescents. Due to small sample size, mother and father data for a single participant were treated as separate data points and examined individually.

The matched comparison group included 24 children. Of those 24, 12 had both mothers and fathers who participated and completed both a stress measure and a personality type measure. There were 9 children who only had a mother complete the

measures and 3 with only a father completing them. This resulted in 36 total parent participants as shown in Table 3.

Table 2

Means and Standard Deviations for Continuous Demographic Variable by Child's Diagnosis

	N	Mean	*SD*	Min	Max
Age					
Diagnosis	59	11.53	2.93	8	18
No Diagnosis	24	11.92	2.62	8	17

Table 3

Participants Completing Measures for Matched Comparison Group

	N	Both Parents	Father Only	Mother Only	Total Parents
Child	24	12	3	9	36

The ASD group included 62 children and their parents. Not all participants in this group completed all measures. In this group, 59 of the 62 children completed the SSQ. Of these 59 children, 57 mothers and 43 fathers completed a stress measure. For the

parents' personality type measure, there were 31 mothers and 26 fathers. There were 17 children who completed the personality measure who had both a mother and a father who completed both the personality measure and the stress measure. There were 9 children who completed the personality measure who had only a mother complete both the personality measure and the stress measure and none with only the father completing both parent measures (see Table 4).

Table 4

ASD Group Participant Measures Completed

	N	Both Parents	Father Only	Mother Only	Total Parents
Child Personality	59	43	0	16	102
Parent Stress Only	33	24	2	7	57
Parent Personality and Stress	26	17	0	9	45

Preliminary Analysis

Descriptives for Dependent Variables

In order to more fully examine the effects of personality on stress, z-scores were created to standardize the Parenting Stress Index and Stress Index for Parents of Adolescents onto the same scale. A z-score is a conversion of a raw score on an instrument to a standardized score represented in units of standard deviations. Z-scores

are commonly used to compare scores on instruments that might not be measured on the same scale. After the z-scores were created for each scale, they were combined into one variable. This resulted in one parent stress score for each parent. In addition to examining the total score, subscales were examined. Z-scores were created to combine the subscales of the PSI/SF and the SIPA. The Parent Domain subscale of the SIPA was collapsed with the Parental Distress subscale of the PSI/SF to create the Parent Scale, the Adolescent Parent Relationship Domain was collapsed with the Parent Child Dysfunctional Interaction subscale of the PSI/SF to create the Parent-Child Interaction Scale, and the Adolescent Domain subscale of the SIPA was collapsed with the Difficult Child subscale of the PSI/SF to create the Child Scale. Means and standard deviations for parent stress, Parenting Stress Index, Stress in Parenting Adolescents, Parent Scale, Parent-Child Interaction Scale, and Child Scale can be found in Table 5. The average score on the parent stress was .01 (*SD* = .99). The minimum was -2.85 and the maximum was 2.67. The average score on the Parenting Stress Index (PSI) total was 78.60 (*SD* = 23.83). The minimum was 14 and the maximum was 110. On the Parenting Stress Index, scores between 56 and 85, within the 15th to the 85th, percentile are considered to be within the normal range of functioning. The average score on the Stress Index for Parents of Adolescents (SIPA) total was 101.25 (*SD* = 56.54). The minimum was 34 and the maximum was 280. On the SIPA, scores lower than the 85th percentile are considered to be within the normal range, those ranging from the 85th to the 89th percentile are considered borderline and those from the 90th to the 94th percentile are considered

clinically severe. For the total score, scores below 238 are in the normal range, 239 to 258 borderline, and 259 to 280 are clinically significant. Scores falling above the 95th percentile, 281 or greater are considered to be clinically severe. The average score on the Parent Scale was .02 (*SD* = 1.00). The minimum was -1.69 and the maximum was 1.71. The average score on the Parent-Child Interaction Scale was .09 (*SD* = 1.00). The minimum was -1.83 and the maximum was 1.68. Child Scale ranged from -2.87 to 1.39 with an average score of .01 (*SD* = 1.00). As these are collapsed scores from separate measures there are no standardized levels for what constitutes a normal range of functioning.

Table 5

Means and Standard Deviations for Parent Stress, Total Stress Index for Parents of Adolescents, Parenting Stress Index Subscales, Parent Scale, Parent-Child Interaction Scale, and Child Scale

	N	Mean	SD	Min	Max
Stress	138	.01	.99	-2.85	2.67
Stress in Parenting Adolescents	52	101.25	56.54	34	280
Parenting Stress Index	86	78.60	23.83	14	110
Parent Scale	138	.02	1.00	-1.69	1.71
Parent-Child Interaction Scale	138	.09	1.00	-1.83	1.68
Child Scale	138	.01	1.00	-2.87	1.39

Relationships between Demographic Variables and Dependent Measures

Independent samples *t* tests were conducted to examine group differences between the categorical variables (e.g. child's gender) on the continuous overall scale variables (e.g., parent stress). Independent samples *t* tests were used to determine if differences exist between two groups of an independent variable on a continuous dependent variables. Mann-Whitney *U* tests were conducted to examine the relationship between categorical variables (e.g. ASD Diagnosis) on the continuous overall scale variables (e.g., parent stress) with unequal sample size.

Primary Analysis Combined Group

Hypothesis 1

Analyses conducted to explore the differences between stress reported by a parent and whether his or her child had a diagnosis or not was conducted using the both the ASD group and the matched comparison group. The total sample consisted of 138 parent participants. Of this sample, 102 had children with a diagnosis and 36 had children with no diagnosis.

A Mann-Whitney *U* was conducted to examine the relationship between parent stress and ASD diagnosis (see Table 6). Results revealed significant differences between children that had an ASD diagnosis and children that did not have an ASD diagnosis for parent stress, $U = 693.00$. Parents of children that had an ASD diagnosis had significantly higher levels of stress ($M = .56$, $SD = .50$) than those that did not ($M = .16$, $SD = 1.08$). One-way MANOVAs were conducted to examine ASD diagnosis Parent Scale, Parent-

Child Interaction Scale, and Child Scale (see Table 7). The overall multivariate effect was significant, $F(3, 134) = 32.57, p < .001$. The univariate effect revealed significant differences for ASD diagnosis on Parent Scale, $F(1, 136) = 6.93, p < .01$, Parent-Child Interaction Scale, $F(1, 136) = 95.24, p < .001$, and Child Scale, $F(1, 136) = 27.09, p < .001$. Parents of children that had an ASD diagnosis had higher scores on the Parent Scale ($M = .15$, $SD = 1.02$) than parents of children that did not have an ASD diagnosis ($M = -.45$, $SD = .80$). Parents of children that had an ASD diagnosis had higher scores on the Parent-Child Interaction Scale ($M = .44$, $SD = .82$) than parents of children that did not have an ASD diagnosis ($M = -1.21$, $SD = .24$). Parents of children that had an ASD diagnosis had higher scores on the Child Scale ($M = .24$, $SD = .89$) than parents of children that did not have an ASD diagnosis ($M = -.84$, $SD = .96$).

Table 6

Means and Standard Deviations for Parent Stress by Child's Diagnosis

	N	Mean	*SD*	*U*	*p*
Stress				693.00	.001
Diagnosis	102	.56	.50		
No Diagnosis	36	.16	1.08		

Table 7

Means and Standard Deviations for Parent Scale, Parent-Child Interaction Scale, and Child Scale by Child's Diagnosis

	n	Mean	*SD*	*F*	*p*
Parent Scale				6.93	.010
Diagnosis	102	.15	1.01		
No Diagnosis	36	-.45	.80		
Parent Child Interaction Scale				95.24	<.001
Diagnosis	102	.44	.82		
No Diagnosis	36	-1.21	.24		
Child Scale				27.09	<.001
Diagnosis	102	.24	.89		
No Diagnosis	36	-.84	.96		

Hypothesis 2

The following section explores the stress reported by mothers in comparison to the stress reported by fathers in regards to parenting their child. These analyses were conducted using a combined sample taken from both the ASD group and the matched comparison group. For this sample, only participants who had both a mother and a father completing the stress measure for the same child were used. This resulted in a sample size consisting of 55 mothers and 55 fathers.

An independent samples t test was conducted to examine the relationship between parent stress and parent gender completing the survey (see Table 8). Results failed to reveal any significant differences between mothers and fathers for parent stress, t (108) = .02, p = .984. One-way MANOVAs were conducted to examine differences between mothers and fathers on Parent Scale, Parent-Child Interaction Scale, and Child Scale (see Table 9). The overall multivariate effect was not significant, F (3, 106) = .57, p = .634. The univariate effects failed to reveal any significant differences between mothers and fathers.

Table 8

Means and Standard Deviations for Parent Stress by Parent

	N	Mean	*SD*	*t*	*p*
Stress				.02	.984
Father	55	-.05	.97		
Mother	55	-.04	.95		

Table 9

Means and Standard Deviations for Parent Scale, Parent-Child Interaction Scale, and Child Scale by Parent

	n	Mean	*SD*	*F*	*p*
Parent Scale				.01	.909
Father	55	.03	1.04		
Mother	55	.01	.98		
Parent-Child Interaction Scale				.59	.444
Father	55	.02	1.02		
Mother	55	.16	.98		
Child Scale				.37	.543
Father	55	-.05	1.08		
Mother	55	.07	.93		

Descriptives of the Independent Variables for the ASD Group

Data for the remainder of analyses includes only children who were diagnosed with ASD. Frequencies and percentages for parent personality variables and match between parent and child personality variables can be found in Table 10. More parents were categorized as extraverted (62.2%) than introverted (37.8%). More parents were categorized as intuitive (53.3%) than sensing (46.7%). Further, more parents were categorized as feeling (60.0%) than thinking (40.0%). More parents were categorized as judging (71.1%) than perceiving (28.9%). More children were categorized as introverted

(53.3%) than extraverted (46.7%). More children were categorized as practical (53.3%) than imaginative (46.7%). Further, more children were categorized as feeling (62.2%) than thinking (37.8%). More children were categorized as organized (57.8%) than flexible (42.2%). Parents and children matched more often on the extraversion/introversion personality dimension (62.2%) than not (37.8%). Moreover, parents and children were less likely to match on the sensing/intuition and practical/imaginative dimensions (66.7%) than to not match (33.3%). Parents and children were slightly less likely to match on the thinking/feeling dimensions (44.4%) than to not match (55.6%). Finally, parents and children were slightly more likely to match on the judging/perceiving and organized/flexible dimensions (53.3%) than to not match (46.7%).

Table 10

Frequencies and Percentages for Parent Personality, Child Personality, and Parent-Child Personality Match

	N	%
Parent Extraversion/Introversion		
Extraversion	28	62.2
Introversion	17	37.8
Parent Sensing/Intuition		
Sensing	21	46.7
Intuition	24	53.3

Table 10, cont.

Frequencies and Percentages for Parent Personality, Child Personality, and Parent-Child Personality Match

	N	%
Parent Thinking/Feeling		
Thinking	18	40.0
Feeling	27	60.0
Parent Perceiving		
Judging	32	71.1
Perceiving	13	28.9
Child Extravert		
Extraversion	21	46.7
Introversion	24	53.3
Child Practical		
Imagination	21	46.7
Practical	24	53.3
Child Flexible		
Thinking	17	37.8
Feeling	28	62.2
Child Organized		
Organized	26	57.8
Flexible	19	42.2

Table 10, cont.

Frequencies and Percentages for Parent Personality, Child Personality, and Parent-Child Personality Match

	N	%
Child- Parent Match Extraversion/ Introversion		
No Match	17	37.8
Match	28	62.2
Child- Parent Match on Sensing/Intuition and Practical/Imagination		
No Match	30	66.7
Match	15	33.3
Child- Parent Match Thinking/Feeling		
No Match	25	55.6
Match	20	44.4
Child- Parent Match Judging/Perceiving and Organized/Flexible		
No Match	24	53.3
Match	21	46.7

Primary Analysis ASD Group

The remaining analyses used samples taken from the ASD group. Within this group, 45 parents completed the total stress score and personality measures. Seventeen of these were fathers and 28 were mothers.

Hypothesis 3

Independent samples *t* tests were conducted to examine the relationship of match between parent and child on the extraversion/introversion dimension and parent stress (see Table 11). Results failed to reveal significant differences; parental stress, t (43) = .97, p = .336. One-way MANOVAs were conducted to examine match between parent and child on the extraversion/introversion dimension and Parent Scale, Parent-Child Interaction Scale, and Child Scale (see Table 12). The overall multivariate effect was not significant, F (3, 32) = .73, p = .546. The univariate effects failed to reveal any significant differences for match between parent and child on the extraversion/introversion dimension.

Table 11

Means and Standard Deviations for Parent Stress by Parent-Child Personality Match for Extraversion versus Introversion

	N	Mean	*SD*	*t*	*p*
Stress				.97	.336
No Match	17	.19	.91		
Match	28	-.12	1.05		

Table 12

Means and Standard Deviations Parent Scale, Parent-Child Interaction Scale, and Child Scale by Parent-Child Personality Match for Extraversion versus Introversion

	n	Mean	*SD*	*F*	*p*
Parent Scale				1.17	.288
No Match	17	-.16	1.11		
Match	28	.23	1.04		
Parent-Child Interaction Scale				.00	.984
No Match	17	.52	.69		
Match	28	.53	.70		
Child Scale				.00	.999
No Match	17	.31	.87		
Match	28	.30	.96		

Hypothesis 4

Independent samples *t* tests were conducted to examine the relationship on match between parent and child on the sensing/intuition and practical/imaginative dimensions on parent stress (see Table 13). Results failed to reveal differences on match between parent and child on the sensing/intuition and practical/imaginative dimensions on parental stress, $t\,(43) = -1.90, p = .064$. One-way MANOVAs were conducted to examine match between parent and child on the sensing/intuition and practical/imaginative Parent Scale,

Parent-Child Interaction Scale, and Child Scale (see Table 14). The overall multivariate effect was not significant, $F(3, 32) = .05, p = .985$. The univariate effects failed to reveal any significant differences for match between parent and child on the sensing/intuition and practical/imaginative dimensions.

Table 13

Means and Standard Deviations for Parent Stress by Parent-Child Personality Match for Parent Sensing versus Intuition and Child Imaginative versus Practical

	N	Mean	*SD*	*t*	*p*
Stress				-1.90	.064
No Match	30	-.20	1.09		
Match	15	.39	.66		

Hypothesis 5

A Mann-Whitney *U* was conducted to examine the relationship between parent stress and parent and child match on the thinking/feeling dimension (see Table 15). Results revealed significant differences on parent and child match on the thinking/feeling dimension for parent stress, $U = 149.50, p < .05$. Parents and children that matched on the thinking/feeling dimension had higher levels of stress ($M = .44$, $SD = .50$) than those that did not match ($M = -.00$, $SD = 1.00$). One-way MANOVAs were conducted to examine match between parent and child on the thinking/feeling dimension Parent Scale, Parent-

Child Interaction Scale, and Child Scale (see Table 16). The overall multivariate effect was not significant, $F(3, 32) = 1.11, p = .362$. The univariate effects failed to reveal significant differences for match between parent and child on the thinking/feeling dimension.

Table 14

Means and Standard Deviations for Parent Scale, Parent-Child Interaction Scale, and Child Scale by Parent-Child Personality Match for Sensing versus Intuition and Child Imaginative versus Practical

	n	Mean	*SD*	*F*	*p*
Parent Scale				.10	.754
No Match	30	.10	1.03		
Match	15	-.02	1.19		
Parent-Child Interaction Scale				.11	.738
No Match	30	.55	.65		
Match	15	.47	.77		
Child Scale				.11	.743
No Match	30	.34	.90		
Match	15	.23	.97		

Table 15

Means and Standard Deviations for Parent Stress by Parent-Child Personality Match for Thinking versus Feeling

	N	Mean	*SD*	*U*	*p*
Stress				149.50	.001
No Match	25	.00	1.00		
Match	20	.44	.50		

Table 16

Means and Standard Deviations for Parent Scale, Parent-Child Interaction Scale, and Child Scale by Parent-Child Personality Match for Thinking versus Feeling

	n	Mean	*SD*	*F*	*p*
Parent Scale				1.41	.244
No Match	25	-.15	1.10		
Match	20	.27	1.03		
Parent-Child Interaction Scale				3.44	.072
No Match	25	.32	.75		
Match	20	.73	.56		
Child Scale				.41	.528
No Match	25	.21	1.02		
Match	20	.40	.80		

Hypothesis 6

Independent samples *t* tests were conducted to examine the relationship on match between parent and child on the judging/perceiving and organized/flexible dimension on parent stress (see Table 17). Results failed to reveal any significant difference on parent stress, t (43) = -1.45, p = .159. One-way MANOVAs were conducted to examine match between parent and child on the judging/perceiving and organized/flexible dimension Parent Scale, Parent-Child Interaction Scale, and Child Scale (see Table 29). The overall multivariate effect was not significant, F (3, 32) = .53 p = .666. Further, the univariate effects failed to reveal any significant differences.

Table 17

Means and Standard Deviations for Parent Stress by Parent-Child Personality Match for Parent Judging versus Perceiving and Child Organized versus Flexible

	N	Mean	*SD*	*t*	*p*
Stress				-1.43	.159
No Match	24	-.20	1.07		
Match	21	.23	.89		

Table 18

Means and Standard Deviations for Parent Scale, Parent-Child Interaction Scale, and Child Scale by Parent-Child Personality Match for Judging versus Perceiving and Child Organized versus Flexible

	N	Mean	*SD*	*F*	*p*
Parent Scale				.14	.709
No Match	24	.12	1.08		
Match	21	-.01	1.09		
Parent-Child Interaction Scale				.49	.490
No Match	24	.60	.61		
Match	21	.44	.77		
Child Scale				.33	.568
No Match	24	.23	.98		
Match	21	.40	.86		

Exploratory Analysis

Additional analyses were conducted to explore the relationship among variables not directly related to hypothesis testing. These analyses were conducted using a sample consisting of the combined ASD group and non-diagnosed matched comparison group. Due to small sample sizes, mothers and fathers were separate data points, thus the total sample for the following analyses consisted of 138 parent participants.

Child Age

Pearson's product moment correlations were conducted to examine the relationship among parent stress, Parent Scale, Parent-Child Interaction Scale, and Child Scale with age of child. As can be seen in Table 19, the results failed to reveal any significant results (all rs *ns*).

Table 19

Pearson's Product Moment Correlations Parent Stress, Parent Scale, Parent-Child Interaction Scale, and Child Scale with Age

	Age
Stress	.009
Parent Scale	-.005
Parent Child Interaction Scale	.014
Child Scale	.009

Child Gender

An independent samples t test was conducted to examine the relationship between parent stress and child's gender (see Table 20). Results failed to reveal any significant differences between male and female children for parent stress, t (136) = -.83, p = .408. One-way MANOVAs were conducted to examine child's gender and Parent Scale, Parent-Child Interaction Scale, and Child Scale (see Table 21). The overall multivariate

effect was not significant, F (3,108) = .19, p = .906. Further, examination of the univariate effects failed to reveal any significant results.

Table 20

Means and Standard Deviations for Parent Stress by Child's Gender

	N	Mean	*SD*	*t*	*p*
Stress				-.83	.408
Male	120	-.02	.99		
Female	18	.18	.99		

Table 21

Means and Standard Deviations for Parent Scale, Parent-Child Interaction Scale, and Child Scale by Child's Gender

	N	Mean	*SD*	*F*	*p*
Parent Scale				.03	.864
Male	120	.01	1.00		
Female	18	.07	1.08		
Parent Child Interaction Scale				.00	.959
Male	120	.09	.99		
Female	18	.11	1.17		
Child Scale				.18	.673
Male	120	.02	1.01		
Female	18	-.12	.93		

CHAPTER V

DISCUSSION

The purpose of this study was to investigate how individual personality types affect the relationships between parents and their children when their child has been diagnosed with an autism spectrum disorder (ASD). Specifically, the aim of this study was to determine if the mismatch between specific personality types, as originally conceptualized by Carl Jung (as cited by deLaszlo, 1959), heightened the reported stress experienced by parents of children with an ASD in their role as parents. An additional matched comparison group allowed for the exploration of whether having a child with an ASD affects the stress reported by parents in comparison to that of neurotypical children, those with no diagnosis. Further investigation explored the difference in stress reported by mothers and fathers.

The current study was broken down into two smaller studies. One included combined data taken from the original ASD group and the matched comparison group. This data was analyzed to investigate hypotheses 1 and 2 or how the reported stress compares between parents of children with an ASD and that of parents whose child did not have a clinical diagnosis and if the stress reported by mothers and fathers differs. The remainders of the hypotheses were investigated using only the data obtained from the

ASD group. These hypotheses looked at how the match or mismatch of personality types affects parental stress.

Children and parent dyads were recruited in two phases. The original ASD group data was taken from a larger study investigating various psychological constructs. For this study, only the data pertinent to the presented hypotheses were used. The matched comparison group was collected specifically for this study and dyads were asked to only complete the instruments used in this study. Participants were recruited by solicitation of professional and personal connections and flyers. Children in the matched comparison group were matched for gender, age, and ethnicity with those in the ASD group.

Relationship among Demographic Variables

Child's gender did not reveal any significant differences for the child having a diagnosis, or for their age. Child's diagnosis did not produce any significant differences for age.

Descriptive Statistics for the Dependent Variables

Scores from the PSI/SF and the SIPA were standardized using z-scores to create one parent stress score. Additionally, z-scores were created to combine the subscales of the parent stress measures. The Parent Domain of the SIPA was collapsed with the Parental Distress subscale of the PSI/SF to create the Parent scale. These subscales reflect the stress a parent feels in relation to his or her function as a parent and personal factors involved in parenting. The new subscale, Parent-Child Interaction Scale is a result of collapsing the Adolescent Parent Relationship Domain subscales of the SIPA and the

Parent Child Dysfunctional Interaction subscale of the PSI/SF. This scale reflects the stress a parent is experiencing in regards to how well the child is meeting expectations and how behavior is impacting the relationship. The Adolescent Domain of the SIPA was collapsed with the Difficult Child subscale of the PSI/SF to create the Child Scale. This scale represents the impact of the individual characteristics of the child such as inherent temperament or learned behaviors.

Conclusions

Hypothesis 1 predicted that parents of children without an ASD, the matched comparison group, would report less stress than parents of children with an ASD. This hypothesis was supported. Parents of children diagnosed with an ASD had significantly more stress than parents of children without a diagnosis. This is consistent with previous literature suggesting parents of children with disabilities report more stress overall when raising their child than parents of children without disabilities. Multiple reasons have been suggested for the additional stress felt by a parent. Parents may experience stress as a result of the image they hold of themselves as a parent and of the resources they have. The loss of the parent's image of the idealized child also increases stress. Additional changes in routine and the increase in time and emotional commitment further heighten the experienced stress. Characteristics of the individual child may also increase parental stress (Abidin, 1992; Bebko et al.1987; Dumas et al., 1991; Ello & Donovan, 2005; Woolfson, 2004).

Analyses conducted on the subscales revealed some significant results. Though the overall multivariate results did not result in significant findings, the univariate effect revealed higher scores for the Parent Scale, the Parent-Child Interaction Scale, and the Child Scale for parents of children with an ASD. Parents of children with and ASD appear to experience stress in all aspects of parenting. The stress impacts their relationship with their child and their role as a parent.

Hypothesis 2 stated that mothers would report greater overall parenting stress as represented by the total stress score than fathers from the ASD group and the matched control group. This hypothesis was not supported. The overall multivariate effect was not significant nor were the univariate effects. These findings were consistent across total stress and the subscales

Hypothesis 3 predicted that parents of children with matching extraversion/introversion scores would score lower on the total stress score than parents of children that did not match on extraversion/introversion in the ASD group. This hypothesis was not supported. No significant differences were found for matching versus not matching on the total stress or the subscales.

Hypothesis 4 predicted that parents of children with matching sensing/intuition scores would score lower on total stress score than parents of children that did not match sensing/intuition scores. This hypothesis was not supported. Analyses failed to reveal any significant differences between parent and child participants that matched on the

sensing/intuition and those that did not on parent stress. Analyses performed on the subscales did not reveal significant findings.

Hypothesis 5 predicted that parents of children with matching thinking/feeling scores would score lower on the total stress score than parents of children that did not match thinking/feeling scores. This hypothesis was not supported. However, the total stress did reveal significant findings. Parents and children that matched reported higher levels of stress.

According to Myers (2003), individuals experience more vulnerability and feel more ineffective in their tertiary and inferior preferences. This likely affects the amount of stress they feel on this dimension. Myers also indicates that the relationship between the parent and child may become stressful if the parent tries to make the child like him or herself. In these cases, children may attempt to change and may experience decreased self-esteem. For example, feeling types may exaggerate their type preferences and thinking types may tend to rebel against their parents. Also, adult thinking types were shown to score higher on goal orientation whereas junior high students with feeling type preference showed more goal orientation (Myers). The difference in youth versus adult type expression may also heighten the stress felt by the parent when their type matches but the expression of that type may not at different developmental levels.

Hypothesis 6 predicted that parents of children with matching judging/perceiving scores would score lower total stress score than parents of children that did not match on judging/perceiving scores. This hypothesis was not supported. No significant differences

were found between parents who matched and those that did not on the total stress score or the subscales.

Personality Type

Personality type was investigated for the ASD group. The majority of parents' personality type resulted in a preference for extraverted rather than introverted, intuitive rather than sensing, feeling rather than thinking and judging rather than perceiving. This would result in a more preferred profile reflecting an ENFJ personality type. Children from the ASD group tended to prefer an Introverted, Practical (Sensing on MBTI), Feeling, Organized (Judging on MBTI) personality profile.

Parent and child matched more often on the extraversion/introversion personality dichotomy than did not match. Parent and child did not match on the sensing/intuition (child practical/imaginative) dichotomy more than they matched. On the thinking/feeling dichotomy, child and parent matched slightly more often than they did not match. Finally, on the judging/perceiving (child organized/perceiving) dichotomy, the dyads were more likely to match than to not match.

Limitations

Like many studies that investigate a special population, the number of participants in this study limits its generalizability. Future studies may employ wider recruitment and longer lengths of data collection to better represent the population of children with high functioning autism and with Asperger's Disorder. Along similar lines, the number of participants representing each age group further limits the study. Though specific

measurements were used to assess parental stress for younger children and for adolescents, each age group in the current study was small. The sample size particularly affected the ability of the researcher to investigate the specific subscale responses of the participants.

The participants in the current study were recruited by various means; flyers were used, as were announcements through autism support groups and local newspapers. The families that chose to participate in the study likely represent a specific sub-population. These families seek to learn more about the disorder and may be more active within the autism community. Future studies may wish to recruit through local school districts. By using a more widespread recruitment, more representative data may be acquired. Additionally, the participants in the larger study on children with HFA, AD, and PDD were asked to complete a number of various assessments. These additional assessments may have influenced participant response of both parent and student.

The current study also recruited participants predominately from the North Texas area. Regional differences in parental expectations and student and parent backgrounds may influence reported parent stress. Parental responses may be different in other areas of the country.

Myers (2003) recommends utilizing follow-up questioning to better define individual personality types. The current study did not utilize follow-up questioning. Participant responses were coded according to the recommended cut-off scores for each

type dichotomy. Though this does provide a strong indication of type preference, the dichotomy of type is better defined and more accurate with additional questioning.

Future Research

This study investigated how different personality types may affect parental stress. Future research could build upon using type-based interventions when working with children with ASD. Providing parents with strategies based on the strengths associated with the child's preferred learning style and investigating the effectiveness of such strategies. Further research using the strengths associated with the preferred type of the parent should be conducted. As parents are more likely to be able to implement specific strategies, investigating their use of type to increase their ability to implement interventions could lend insight as to how existing interventions could be made more effective.

Research focusing on the usefulness of teaching children with an ASD to move beyond their preferred style should be undertaken. This line of research could prove especially useful for children as they move between different environments, such as home to school or from classroom to classroom. In that it would be unrealistic to expect others in varying environment to cater to the child's preferred style, enhancing the child's ability to adapt could prove effective.

Teachers have specific teaching styles that likely represent their own learning styles (Haring, 1985). Future studies exploring a teacher's use of type to expand his or

her teaching style would provide additional strategies to reach all students, particularly those with ASD. Expanding the current study to investigate whether teachers reported more behavioral difficulties with students who had similar types to their own could allow the teacher to re-frame his or her interactions with the child. This would also probably be further impacted by the concept of goodness of fit. Students who match learning styles to their teacher's personality type may present a greater challenge to the teacher who may in turn misinterpret behavior that is natural for the student type. An extension of such a study could also implement strategies that utilized building on understanding of types to impact teacher to student communication and if those strategies affected teacher reports of student behavior.

In a 1995 National Teaching & Learning Forum, McKeachie indicates that students have more difficulty learning when the teaching occurs outside of their preferred learning style (McKeachie, 1995). The article discusses the difficulties that can arise when students or teachers become entrenched in their own style whether it be teaching or learning. McKeachie makes the point that learners and teacher often encounter situations that don't meet their preferred style. By creating a profile of individual learning style, parents and teachers could help the student expand their learning style to build upon their less preferred learning style. "Parents can help students to develop the skills and strategies needed for learning effectively from teachers who do not match their preferred style" (McKeachie, p. 2). Since individuals have the capacity to move beyond their preferred learning style, by discovering student preferred learning styles parents can help

their child learn to move beyond their preferred style to match the situational environment. Looking at students with an ASD who attend mainstream classes, typically functioning students in the same class, and the interaction with teacher personality type may provide insight into how personality type and learning style is reflected in such classes.

Future studies comparing the reported stress of parents of children without an ASD diagnosis and those with a diagnosis would allow for more specific comparisons. Utilizing the match and mismatch of parent and child personality types with non-diagnosed children may illuminate more specific areas that cause stress for parents of children with an ASD. Further investigating the specific subscale that may be elevated similarly or differently between the two groups could be useful to further define which domains create more stress for those families with a child with an ASD.

Implications for School Psychology

Understanding the preferences of type will allow a school psychologist to better communicate with that parent. Additionally, looking at teacher personality types could also allow school psychologists to help that teacher better understand possible causes for stress within the classroom.

A parent using their thinking preference may clash with their child who is also using their practical (thinking) preference if the basis of the underlying thought process is different. Parents likely come at a conclusion by a different set of constructs than their

child. School psychologists can assist the parent in understanding that the cause of the conflict, which creates stress, may be the underlying thinking process.

School psychologists can use type to increase a parent's understanding of their selves, their child, and their interactions. As each type has traits and strengths, by understanding these, a parent can expand the use of their current communication style. Insight into the possible causes for some of the stress the parent feels can help define how they approach their child. School psychologist can provide a parent training and an opportunity to try out new methods to communicate with the child based on type strength.

The psychologist using type-based interventions may be able to better tailor interventions that are more effective for the child and family. The psychologist with an understanding of their own type preferences can better understand some of the possible reasons they are not being effective when interacting with a child. Just as parents and their child matching temperament type resulted in more stress, the psychologist's style matching with that of the client may also create stress.

Psychologists who are able to communicate in the style of the child and or family members type can connect with clients on a level that builds on the client's strength. As the relationship is established, the psychologist can then return to their own more preferred style based on their type (Bayne, 1995).

One of the premises of using personality type with children is that all styles have their strengths. Joyce and Oakland (2005) conducted a study with children diagnosed

with behavioral disorders. In concluding their study, they point out that previous researchers have identified "differences in temperament learning styles... for academic persistence, graduation, giftedness, and achievement" (p. 133). Using the strengths of the individual types provides those working with students another way to help them capitalize on the strengths of their type while working to expand their lesser preferred types.

Summary

This study produced both expected and unexpected results. As expected, parents of children with autism spectrum disorders report significantly more stress than parents of children without a diagnosis. Though it was anticipated that mothers would report more stress than fathers, this did not hold true for the current study. Unexpected were the findings regarding the stress experienced when personality types match. This goes against the prevalent literature indicating better communication and understanding result for people sharing types.

It is not clear how much type is influenced by the family system. However, the findings of this study do not support the idea that individuals within the same family benefit from sharing type. It appears the opposite is true. Using type may still allow for increased communication, it would just seem counterintuitive. Parents using type should concentrate on using the most preferred type of the child and on helping the child to expand their non-dominant functions. Particularly with children with autism, parents' ability to effectively communicate could be enhanced by understanding the child's

perspective as expressed through type. Understanding the child's different way of taking in information and processing that information provides insight to where the communication is breaking down. In other words, using the strengths associated with the child's preferred type could allow the parent to capitalize on these while avoiding attempts to communicate with the child in ways that are outside their preferred style.

Many facets of family life work in concert to create the stress experienced by parents. This study did not seek to define all of these. Kobes and Lichtenberg (1997) conducted a similar study regarding the how the match of personality types affects stress between partners in a marital relationship. Reported findings indicate that communication and marital satisfaction was not related to the match between partners. Possible reasons include the MBTI being written in a forced choice format, failing to take into account the varying nuances of communication and satisfaction with a relationship. Comparable confounds exist within the current study. Family relationships are complex as are the expectations of parenting. The environment and goodness of fit may not accurately be reflected by a measure of personality type though these may provide an additional tool to use to effect how well a child fits within an environment and how they interact with others.

Use of type can be productive in helping individuals understand one another. It can lead to better understanding, communication, and learning. The prevalent literature on type should be taken critically but not discounted.

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