



12-2007

## Temperament and Personality in Preschoolers: Are the Concepts the Same or Different?

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To the Graduate Council:

I am submitting herewith a dissertation written by Cathy Grist Litty entitled "Temperament and Personality in Preschoolers: Are the Concepts the Same or Different?" I have examined the final electronic copy of 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 Education.

Susan M. Benner, Major Professor

We have read this dissertation and recommend its acceptance:

H. Amos Hatch, Schuyler W. Huck, Christopher Skinner

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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TEMPERAMENT AND PERSONALITY IN PRESCHOOLERS:  
ARE THE CONCEPTS THE SAME OR DIFFERENT?

A Dissertation  
Presented for the Doctor of Philosophy  
Degree  
The University of Tennessee, Knoxville

Cathy Grist Litty  
December, 2007

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## **Acknowledgements**

I would like to thank all those who have supported me while I have completed my Doctorate degree in Early Childhood Education. I would like to thank Dr. Susan Benner for her guidance and advisement over the last several years as well as her support. I would also like to thank Dr. Amos Hatch for his support and guidance over the last several years. I would like to thank Dr. Sky Huck and Dr. Chris Skinner for participating on my dissertation committee and for their input and guidance.

Finally, I would like to thank my family and my closest friends whose support has been invaluable to me as well as their encouragement. Without their support this would not have been possible.

## Abstract

Individual differences among adults have generally been conceptualized in terms of personality theory and traits and attributed more to life experiences and conditioning than innate dispositions. In contrast, to the more limited extent that individual differences among young children (birth to kindergarten) have been recognized and studied, they have generally been conceptualized in terms of temperament theory and traits, attributed to innate biological programming than to experience.

Recent developments in the field of personality theory begin to blur this distinction, suggesting that individual differences even in young children can be productively studied from the standpoint of personality traits. Specifically, the Five Factor Model of personality has exhibited applicability across a wide range of age groups, cultures, and even species.

The purpose of the present study was to compare and contrast measure of temperament and personality a sample of preschool children. Temperament traits were assessed with a traditional measure, and a new preschool rating instrument was used to assess personality traits from the Five Factor framework. Data were gathered from 103 preschool children.

Preschool teachers answered questions about individual children's characteristics. Strong significant correlations were found between the temperament trait Emotionality and the personality trait Neuroticism and between the temperament trait Sociability and the personality trait Extraversion. The temperament trait of Activity was also correlated with the personality trait of Extraversion. The overall pattern of correlation data suggest that individual differences in preschool children can be adequately described using the

Five Factor Model, and that this framework may effectively subsume traditional theories of temperament.



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## **Chapter 1**

### **Introduction**

Researchers have long debated the theories of personality and temperament as evidenced by the literature. Many theorists posit that temperament begins at birth and spans throughout the lifespan. Other researchers take the stand that personality develops later through experiences in the environment. There has been an increase in the number of studies in both temperament and personality in young children over the past several years (Digman, 1994; Hagekull & Bohlin, 1998; Putnam, Gartstein, & Rothbart, 2006; Rothbart & Bates, 1998).

Recent developments in the field of personality theory begin to blur the distinction between the two, suggesting that individual differences even in young children can be productively studied from the standpoint of personality traits. Specifically, the Five Factor Model (Costa & McCrae, 1992b) of personality has exhibited applicability across a wide range of age group, cultures, and even species.

The purpose of the present study was to investigate the differences and similarities between temperament and personality in young children. Daycare teachers' perceptions of children's personality and temperament were measured. Teachers' constant interaction and observations with young children on a daily basis make them valid sources of data regarding children in their care. Temperament traits were assessed with a traditional measure, and a new preschool rating instrument was used to assess personality traits from the Five Factor framework.

## Current Research

Frequently, research in this area is conducted with infants and toddlers and the study of temperament and personality as children get older.

Some issues with research in the area of temperament and personality are that researchers have studied temperament in young children and made comparisons to personality in older children. There are few studies conducted that investigate personality and temperament in young children simultaneously.

A major research project in this area was conducted by a group of individuals who interviewed parents about what they thought were personality traits in their own children (Kohnstamm, Halverson, Mervielde, & Havill, 1998). Parents in several countries described traits about their children similarly. All of the traits were combined to create five factors of personality, thus providing strong evidence for personality development in young children (Costa & McCrae, 1992a; Kohnstamm, Halverson, Mervielde, & Havill, 1998).

Kohnstamm et al. (1998) used free description to have parents describe their children and found that parents from seven different countries described their children in terms of personality traits. When these descriptions were factor analyzed, five factors emerged that were similar to the five factor model. The method of free description used in this study has an advantage particularly when used with individuals in different cultures in that parents are using their own language to describe their children's traits and behaviors and are not influenced by the researchers. Thus, the free descriptions are seen as being more likely to be embedded in the culture and subculture of the individual who is giving the description (Mervielde, 1998).

In addition, when factor analysis of free description from parents in different cultures, using their own words and unique cultural perspectives, yields clear replication of the five factors of the FFM, it speaks to the universality of the model in children as well as adults (Mervielde, 1998). This study was an attempt to begin to develop dimensions of personality in young children.

The biological nature of both constructs, temperament and personality, comes into play when viewing genetics research. In a review of the literature on molecular genetics studies, Van Gestel and Van Broeckhoven (2003) reported that participants with psychiatric disorders scored differently on personality measures. However, researchers also identified normal personality characteristics that were similar among participants. Consideration in looking for normal personality genes is as important as looking for genes in individuals with disorders. One process for discovering genes in personality research in this review was to compare mean scores of participants' personality measures and then to look for specific alleles or genotypes. The researchers found convergence on the same candidate genes (genes that involved neurotransmitter pathways) (Van Gestel & Van Broeckhoven, 2003). In a review of the literature, several researchers searched for genes in psychiatric disorders such as affective disorders, ADHD, and substance dependence. Although Van Gestel and Van Broeckhoven (2003) note the advantages of self-report inventories in their literature review, they recommend experimental research as the best way to study personality. Researching personality has not been an easy task and perhaps a mix of research methodologies is appropriate.

Genetics plays a role in personality and temperament. Researchers have found that both temperament and personality do have similarities but also explain that

personality contains much more than the temperament domain (Rothbart & Ahadi, 1994). For example, personality includes patterns of habitual behavior as well as expressions from individuals of content, values, needs, and goals of an individual. It also includes the perceptions of an individual and the view the person has of the world and others.

Digman and Shmelyov (1996) used three sources in their research, which included scales based on FFM literature as well as temperament literature and Russian teachers of Russian school-age children and concluded that temperament was the basis of personality. Teachers rated children on 60 different characteristics on four different forms, all corresponding with the FFM. Teachers had to determine if the characteristic that they were rating on each child was present in a small degree or not at all to present to a very high degree. Ratings were then standardized to control for individual differences in use of the scales. The scores were then correlated and factor analyzed. Researchers found that temperament measures fell within in the scope of the FFM.

Digman and Shmelyov (1996) found that the FFM was replicated with the exception of the Neuroticism scale. The five components of the FFM were recognizable in other cultures and languages except for Component 4, Neuroticism (Emotional Stability versus Emotional Instability). The researchers indicated that a language barrier existed between Russian and English when translating on the scale, and this could have been one of the reasons why this scale was not replicated in Russian.

Other commonalities found between the two concepts include the focus on individual differences, and both describe individuality in terms of dimensional structures of temperament and personality (Hagekull & Bohlin, 1998). The focus of this study was on preschool temperament and school age personality in Sweden, and this research was

part of a larger longitudinal study. The Buss and Plomin (1984b) EAS questionnaire was used with children who were four years of age. A measure of the FFM questionnaire was used which was adapted for adolescents. Hagekull and Bohlin (1998) found that Emotionality was significantly related to later Neuroticism, Activity was positively related to later Extraversion as well as to Openness and negatively related to Agreeableness. Researchers also found that Sociability was significantly related to later Extraversion and Openness and Shyness was positively related to Agreeableness and Conscientiousness and negatively to Openness. It was concluded in that personality in middle childhood was consistently related to preschool temperament.

In a major cross-cultural study of children 3 to 12 years of age, Halverson, Havill, Deal, Baker, Victor, Pavlopoulos, Besevegis, and Wen (2003) obtained 50,000 parental descriptors of children from eight countries. They applied a variety of data reduction techniques to identify a set of 14 “mid-level” marker traits that were stable across the full age span and common across cultures. Of primary interest here is that they then used confirmatory factor analysis to map these marker traits onto a five-factor structure, and a strong fit was achieved with the FFM. Five of the marker traits were linked to Extraversion (Positive Emotions, Sociability, Considerate, Activity Level, Openness), two with Agreeableness (Antagonism, Strong Willed), three with Conscientiousness (Organized, Achievement Orientation, Distractible), three with Neuroticism (Fearful/Insecure, Negative Affect, Shy), and one with Openness (Intellect). These researchers discuss both personality and temperament as broad constructs related to individual differences in children, but they do not specifically identify their 14 marker

traits as either, referring to them variously as marker traits, mid-level dimensions, or personality/temperament variables.

Researchers of both temperament and personality traits use similar methods, instruments, and analyses when conducting research. The overlap between both temperament and personality seems to be high when comparing older children and adults (Rettew & McKee, 2005). What is less known is the amount of overlap that is found in young children, particularly children who are preschool age. Most theorists and researchers who have attempted to identify developmental processes have identified temperament for younger children and have chosen to label similar traits in older children and adults as personality traits.

Many researchers and theorists have not been able to agree on the differences and similarities of temperament and personality traits in young children. The temperament theories are organized somewhat differently by each theorist and researcher with some similarities to personality traits (Buss & Plomin, 1975; Rothbart, Ahadi, & Evans, 2000). Temperament has been compared to personality traits in older children and adults in much of the past and current literature, but when looking at this comparison of traits in young children there is a paucity of research.



## Chapter 2

### Review of the Literature

Traditionally, individual differences among adults have been conceptualized as personality variations, while individual differences in young children have been considered as variation in temperament. This chapter will review a broad array of personality theories focusing on the five factor theory, followed by a review of major perspectives on temperament. Finally, the present study will be described as an effort to integrate both perspectives as we consider individual differences in preschool children.

#### Theories of Personality

Personality theories have been studied since the time of ancient Greek philosophers. Personality theories can be divided into several categories, all with a unique distinction and with the theorists adding information to each theory to make it his or her own. Personality has been studied and researched from many different psychological view points through history, such as psychoanalytic, humanistic, behavioral, and more modern views such as trait theories similar to the five factor model (Schultz & Schultz, 2005, McCrae & Costa, 1996).

Psychoanalytic Theories. The study of personality in a formal way began at the end of the 19<sup>th</sup> century by Sigmund Freud. Psychoanalysis used by Freud with patients led him to believe that each individual was motivated by two biological forces, sex and aggression, as well as by unavoidable conflicts in the early years. This contribution of forces was considered to shape personality in adulthood (Shultz & Shultz, 2005). Freud believed that personality was developed a through sequences of steps until age five.

Freud's personality theory also had three structures that made up the personality: the id, the ego, and the super ego. He believed that the id operates on the pleasure principle; when the body is in a state of need this causes tension, which is alleviated by satisfying the need. The id strives to pleasure or satisfy this need. The id is the driving force for the other two components of personality structure. The ego is the rational structure of an individual's personality. It operates on the reality principle. The ego controls an individual's ability to regulate immediate wants and impulses of the id. The third structure in Freud's personality theory constitutes the superego, which is formed in early childhood and gives an individual his or her sense of what is right and wrong. It is what is considered to be the moral side of personality and is typically formed by age 5 or 6 (Freud, 1925). The superego has two elements: the conscience, which is developed when children are punished for particular behaviors, and the ego-ideal, which develops when children receive praise for engaging in good behavior (Westen, 1998).

Freud also emphasized the importance of anxiety in his personality theory. According to Freud, anxiety develops when the id, ego and superego are in conflict, and individuals develop and use defense mechanisms as a way to deal with anxiety (Freud, 1925). This theory had a large impact on the way personality was thought of and the understanding of personality. Many theorists have spent much time either trying to build a theory around Freud's concepts and theories of personality or to develop ideas that are entirely different (Schultz & Schultz, 2005).

Carl Jung and several other students of Freud developed a theory of personality that differed and was actually in opposition to some of the major points of the psychoanalytic approach to personality (Eisold, 2002). Jung believed that personality

was not only influenced by experiences in early childhood but by future experiences. Individuals are affected by what happens during early childhood and what they aspire to do in the future. Another main point of difference between the two theories of personality has to do with role sexuality plays in personality development. Freud had defined the libido as the manifestation of the life instinct, primarily sexual energy. Jung redefined libido as a more generalized psychic energy, which included but was not restricted to, sexual energy. The last area of distinction between the two theories involves the role of unconscious. Jung believed that personality has inherited primal experiences, and this became a core of the personality system (Jung, 1961). In general, Jung's personality theory broadened and redefined the Freud's psychoanalytic theory of personality. Jung also added the idea that personality was an innate construct as well as learned, and childhood experiences are important, but personality is more influenced by midlife experiences and aspirations for the future (Bair, 2003).

Alfred Adler developed a theory of personality that focused on an individual as being social, and that personality is shaped by interactions with others and social environments. His theory was different in that he disagreed with Freud that individuals were motivated by biological needs such as sex and aggression. Sexuality was minimized in the development of personality in Adler's theory. For Adler, the conscious was at the core of personality rather than the unconscious, and he believed that individuals created their own future and selves. Each person was an active participant in the development of his or her own personality (Hoffman, 1994).

Adler's personality theory consisted of several components such as inferiority feelings, compensation, the inferiority complex, and the superiority complex. Inferiority

feelings are always present in each person and are the source of human striving.

Individual growth begins when a person attempts to overcome inferior feelings and strives for higher levels of development. This process occurs throughout the lifespan and if a child or adult is unable to compensate for inferiority then he or she can develop an inferiority complex. If an individual can compensate for feelings of inferiority then he or she develops a superiority complex. In his theory of personality, Adler did not believe that an individual spent his or her entire life avoiding feelings of inferior feelings but ultimately was striving for superiority or perfection. Adler believed that personality developed from an individual's drives toward the future (Adler, 1930).

Karen Horney developed a new approach to psychoanalysis and to personality development that was in direct opposition to Freud's school of thought. Horney believed that development of personality was impacted by social influences. Her theory of personality did not emphasize sex but placed more emphasis on social relationships, and this shaped an individual's personality (Gilman, 2001). In Horney's theory of personality an individual is driven by the need for security and love.

One of Horney's main components dealt with the treatment of an individual during the early years of life and the affect this had on adult personality. She believed that in early childhood if a child did not feel loved and secure that the normality of personality in adulthood could be jeopardized. The need for safety and security and freedom from fear was one main element of this theory. Another element of this theory was that basic anxiety is the foundation for neurosis. Anxiety was considered a feeling of loneliness and helplessness which was related to hostility (Horney, 1937). A child could be protected from anxiety in four ways which include: securing affection and love, being

submissive, attaining power, and withdrawing. The first three could be used by an individual by engaging with another individual in childhood as way of protecting one's self and as a basic attempt at coping with the environment. The fourth way, withdrawing, was a way of protecting one's self from anxiety with the need to disengage from other individuals. All of the protective factors were used as a defense against pain rather than seeking joy and happiness.

Many theorists focused on when personality is developed and at what stage of life personality is developed. Erik Erikson developed a theory of personality that developed over the entire life-span of an individual. Erikson's theory is most popularly known as a stage theory and each individual goes through a stage at the point of a crisis or resolution of a crisis. Erikson was trained in Freudian methods by Anna Freud. His theory broadened and redefined Freud's personality theory, but many of the many the main premises of Erikson's theory are founded on psychoanalysis (Friedman, 1999).

Erikson's personality theory expanded Freud's stage theory from age 5 to death. Erikson believed that personality developed from birth to death and included eight stages. Each stage allows for development of basic strengths, and an individual moves to another stage once a crisis occurs or they need to develop new ways of adapting or coping with a crisis or conflict. The theory also included the influence of culture and society on personality as well as historical experiences and events. He believed that innate biological influences were not the only forces that influenced personality (Erikson, 1950).

The psychodynamic theories have had a major impact on western culture, and most educated individuals are familiar with the key ideas described by Sigmund Freud and his followers. In general, though, these concepts have received little substantial

scientific support, and they are no longer representative of mainstream thought among modern personality psychologists (Schultz & Schultz, 2005).

When psychodynamic theories did not meet the needs of individuals, another theory and school of thought began to be of interest to many to explain personality and was seen as a more optimistic way to look at human personality development. Many theorists began to look toward humanistic personality theory.

Humanistic Personality Theory. Humanistic personality theory emphasizes human interests and values. Personality theory from the approach of humanistic psychology focuses on the strengths and virtues of individuals rather than neuroses and psychoses characteristic of a psychoanalytic view of personality. Humanistic personality theory perceives the development of personality in individuals more optimistically due to each person having the ability to choose freely and reach his or her full potential (Schultz & Schultz, 2005).

Abraham Maslow proposed a personality theory from the perspective of humanistic psychology, which consists of the hierarchy of innate needs. There are five innate needs, which drive individual behavior. The five categories of needs include physiological, safety, belongingness and love, esteem, and self-actualization (Maslow, 1968, 1970). In the theory, each of the needs has a hereditary component; however they can all be influenced and affected by the environment in the form of social norms, learning, and an individual's fear of disapproval from other individuals.

In Maslow's theory of personality, one has to meet a basic lower need in the hierarchy before meeting a need higher in the hierarchy. For example, a person must meet the basic need for food and water before the need for love and belongingness can be

met. Basic needs are necessary for biological survival, and higher needs come later in life and are not necessary for survival. Higher needs are considered to be growth and emotional needs and enhance emotional well-being (Maslow, 1968, 1970).

Individuals are not driven by all the needs at the same time and only one need dominates a person's personality at one time. The need that dominates an individual at any given time depends on which of the other needs have been met (Maslow, 1968, 1970). Maslow believed that needs also were driven by economics and social events that surround a person, so the environment plays a role in the needs that a person has at any given time as well.

Carl Rogers was another theorist that looked at personality through a humanistic psychological lens. One of the main premises of Rogers's theory of personality is that an individual is able to change and improve personality as well as influence his or her own behavior (Rogers, 1961). Rogers's theory of personality focuses on the present and an individual's ability to change his or her personality with current emotions and feelings. He does not discount that childhood does influence the way we perceive our environment but asserts that it does not have the impact on current behavior that Freud, Jung and many of the other psychoanalytic theorists believed that it did (Schultz & Schultz, 2005).

The core idea of Rogers's personality theory consists of the way an individual perceives him or herself. Rogers believed that people are motivated to enhance the self or, in his words, to actualize the self. His concept of self-actualization was that all human beings have the tendency to meet psychological and physical needs. Rogers believed that actualization begins in infancy; in fact, in the womb self-actualization facilitates the differentiation of organs. Perseverance and the desire to grow is part of the self-

actualization process from birth to the grave. Rogers described the whole process of self-actualization as a genetic blueprint; however, he was unable to ever explain or clarify how the process actually functioned. An individual evaluates experiences as to how successful he or she is in contributing to the actualization process. Experiences that promote the process are sought after and those that do not are avoided (Rogers, 1961).

Individuals also seek out positive regard, which is the need for acceptance, love and approval from others that is not contingent on their behaviors. Typically, unconditional positive regard begins in childhood and is received from a caregiver such as a mother who gives acceptance and love to a child regardless of his or her behavior. Self-image begins to develop based on conditional positive regard. For instance, children avoid behaviors that are in direct opposition to their parents. If they do not avoid such behaviors, the child's self-image is threatened (Rogers, 1961). A person who is fully psychologically functioning has self-awareness in all situations, is free from anxiety, and is able to live in each moment. These individuals are able to enjoy a sense of self and growth in personality.

Humanistic theories peaked in popularity during the 1960's and 1970's, with a notable decline since that time in terms of their representation in personality textbooks and in the formal literature in psychology. The primary concepts of personality offered by humanistic theorists tended to be more philosophical than scientific and did not readily lend themselves to testable hypotheses. Thus, like the psychodynamic theories, the humanistic theories are now considered a part of the history of personality psychology rather than a part of current mainstream thought.



Behavior Theory. The behaviorists perceive personality as an accumulation of responses that have been learned in the environment and as a collection of overt behaviors and habits. Personality consists of what can be observed objectively and manipulated and measured. There is no room for internal forces controlling personality.

One of the most well known behaviorists, B. F. Skinner, down played the importance of personality as a distinct construct, because he considered the primary causes of behavior to be stimuli external to the organism. He believed that behavior was overt and that external forces caused behavior. Skinner's belief that behavior was controlled by consequences and not by internal or subjective states made his theory quite different from the foundation of other personality theorists. Therefore, Skinner did not claim to have a personality theory (Nye, 1992). However, several other theorists were interested in looking at personality through a behaviorist perspective, such as Albert Bandura.

Bandura, like Skinner, believed that behavior was overt, but he also believed that behavior was mediated by internal cognitive processes (Bandura, 2001). It is through this mediation process between the stimulus and response that behavior is controlled. Bandura had several components to his theory, including observational learning and self-efficacy. Individuals learn through observing or imitating another person's behavior. Another concept of the theory was self-efficacy, which refers to feelings of adequacy and coping with life. When an individual is able to meet and maintain standards of life, then self-efficacy is enhanced. On the other hand, when an individual is unable to meet standards or expectations, self-efficacy is lowered (Bandura, 2001). Bandura believed that many of the components of his model, such as observational learning and self-efficacy, began in

infancy and continued through old age, progressively through different stages at different developmental stages.

The neo-behaviorist ideas of Bandura served, importantly, to bridge the gap between the sterile, pure stimulus-response psychology of Watson and Skinner and modern perspectives of cognitive psychology. With the highly researched and well-documented personality characteristic of self-efficacy, Bandura demonstrated that stable internal traits represent systematic individual differences, they can be measured reliably and validly, and they exert clear influence on observable patterns of behavior. This perspective is most fully developed in the important branch of personality psychology labeled trait theory.

Trait Theories. Personality theory became recognized as an academic endeavor in the 1930's when trait theorists began formulating and developing trait theories of personality. A trait is a personal characteristic that is distinguished in an individual. It is a way of describing a particular quality about a person and how they adapt and cope with their environment. The goal of trait theory is to understand individuals as a combination of traits.

Cattell's personality theory was one of the first that diverted from traditional psychoanalytic theories in that it did not originate in a clinical setting, and his main goal was to be able to predict what an individual would do or how he or she might behave in a particular situation or in response to certain stimulation. Cattell chose to refer to traits as mental elements of personality. He believed that only when an individual's traits are understood can a prediction be made about the individual's behavior in response to stimulation or how the individual would react in a particular environment (Cattell, 1993).

When researching traits in his theory, Cattell used the statistical method of factor analysis as an approach to understand personality. He was one of the first researchers to use this type of scientific rigor while analyzing personality. Cattell defined traits as being the basic structural units of personality (Cattell, 1993).

Hans Eysenck developed a trait model of personality that was similar to Cattell's in key ways. He agreed that personality was comprised of traits, and he also utilized factor analysis as the primary method of research. Yet, he took issue with the subjectivity that could go into the factor analytic method and choices that a researcher could make when using this method. He used factor analysis in his own research, but based it on broader experimental findings, questionnaire data, and multiple factor analyses (Eysenck, 1990). From many years of research, he developed a theory of personality with traits that had three dimensions which included E: extraversion versus introversion, N: neuroticism versus emotional stability, and P: Psychoticism versus impulse control (or superego functioning). All of the traits in Eysenck's theory remain stable throughout the lifespan, starting in childhood through adulthood regardless of the experiences or environmental influences an individual has had (Eysenck, 1990). The early work of trait theorists such as Eysenck and Cattell lead the way for other theorists to develop the beginning of what we know as the Five Factor Model of personality, sometimes known as the Big Five.

Five-Factor Model (FMM). In the late 1940's, the Five Factor Model of personality began to take shape. Researchers were developing various personality scales and subjecting them to factor analytic methods, and across a wide range of subject populations and measurement techniques. A relatively consistent set of five broad factors emerged time after time (Digman, 1996). Through the 1960's theorists debated about

whether there were five factors related to personality or if the entire concept was too simple. More research was needed with more sophisticated statistical measures to be sure that no factors were left out. Different theorists were coming up with different factors, depending on the scales and the statistical methods used (Digman, 1996). It was not until the 1980's that the FFM made a resurgence, and theorists in the field of personality began to reach a consensus that five factors of personality were present in most research studies that existed up until that time.

During the 1980's, Goldberg and his associates on the west coast (Goldberg, 1993), utilizing the lexical approach pioneered by Cattell, provided compelling data to support the assertion that the Big Five factors accounted for most of the variability in human personality. At the same time, Costa and McCrae, on the east coast (Costa & McCrae, 1992a), using the approach of factor analyzing existing and historical personality questionnaires, arrived at a 3-factor approach, most similar to Eysenck's. When these two groups of researchers combined their efforts, it was immediately clear that Costa and McCrae had missed the additional factors (agreeableness and conscientiousness) as a result of their methodology, and they added these factors to produce a model similar to the Big Five. Costa and McCrae's FFM is the most fully developed and described version of this theory and is the basis of widely used modern personality instruments such as the Revised NEO Personality Inventory (NEO-PI-R) (Costa & McCrae, 1992b) and the Hogan Personality Inventory (Hogan & Hogan, 1995). Although there are some notable critics (e.g., Block, 1995), over the past 20 years a remarkable and near universal consensus has been reached with regard to the Five Factor

Model as the most useful and accurate perspective on human personality yet achieved (Digman, 1996).

Costa and McCrae (1996) developed the FFM as it exists currently. There are five basic tendencies or factors in the model, which include neuroticism, extraversion, openness, agreeableness, and conscientiousness. These basic tendencies are typically inferred and not observable. These can be modified at any point in an individual's life by disease, psychological trauma, or psychological intervention. Basic tendencies are inherited or are considered to be imprinted by early experiences (Costa & McCrae, 1996). The basic tendencies have also been considered to be the raw material of personality, or the basic disposition of an individual.

Each of the basic tendencies influences the patterns of thoughts, feelings, and behaviors (Costa & McCrae, 1996). The first of the basic tendencies is neuroticism and for individuals to typically experience negative feelings such such as anxiety, angry hostility, depression, fear, disgust, and sadness is at the core of this first tendency. The neurotism scale is one of the most comprehensive scales of the FFM and is associated with a person's ability to adapt and adjust as well emotional stability (Costa & McCrae, 1992b). The six most frequently measured facets under the neuroticism scale are anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability (Costa & McCrae, 1992b), and individuals susceptible to these emotional states may be more likely to experience other emotional states within the neuroticism scale. The N scale addresses an individual's degree of adjustment versus maladjustment as well as his or her level of emotional stability versus emotional instability.

The domain of extraversion includes sociability, assertiveness, active, and talkative. Individuals who are typically extraverted tend to enjoy large groups and the company of others as well as stimulation and excitement (Costa & McCrae, 1992b). Introversion is also part of this basic tendency, which includes those individuals who are reserved, even-paced, independent, and prefer to be alone. They are not typically unhappy or what would be considered pessimistic, which is often the case when someone is thought of being an introvert. In the FFM, basic traits are seen as relatively independent of each other. For example, extraversion-introversion vary independently of happiness-unhappiness (Costa & McCrae, 1992b).

Openness to experience is a dimension that describes individuals who have active imaginations, aesthetic sensitivity, and are attentive to inner feelings (Costa & McCrae, 1992b). The facets most frequently measured on this scale include fantasy, aesthetics, feelings, actions, ideas and values (Costa & McCrae, 1992b). A person who scores high on this scale has a tendency to have intellectual curiosity and preference for variety. These individuals are open to novel and unconventional ideas, and they may experience positive and negative emotions more intensely than someone who scores lower on this scale. Costa and McCrae (1992b) report that this scale is often associated with education and measured intelligence, particularly creativity and divergent thinking.

Agreeableness is a tendency found in individuals that are thought to be altruistic. It is a dimension that is that is mainly an interpersonal tendency. Individuals who rate high in the area of agreeableness often are sympathetic to others and tend to be more preferable socially. The facets of this dimension include trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness (Costa & McCrae, 1992b).

Individuals who have low agreeableness tend to be antagonistic and egocentric as well as competitive with others.

The last factor, conscientiousness, describes individuals who plan, organize and carry out tasks. Individuals who score high on this scale typically are strong-willed and determined as well as purposeful. The facets of conscientiousness include competence, order, dutifulness, achievement striving, self-discipline, and deliberation (Costa & McCrae, 1992b).

Theories of personality, including the FFM, have traditionally been used to describe individual differences in adults, to some degree adolescents, and to a lesser degree older children, but not young children. This pattern may be based upon a broad philosophical belief that personality develops over time and not fully until adulthood, and that children are essentially “unformed.” Specific developmental theories of personality, such as those of Freud, Erikson, and others, would exclude the concept of a formed, measurable personality in the preschool age. However, it is clear that young children do indeed differ markedly from each other, and it has been useful to develop models of individual differences in this age group. Interestingly, an alternative model of individual differences has been used when dealing with young children, generally referred to as temperament theory. Having two distinct concepts, personality for older individuals and temperament for younger ones, allows one to recognize the obvious fact that young children differ from each other, without violating the theoretical notions that personality has a significant learned component and develops slowly over time. In the next section leading perspectives on temperament are reviewed. Following that, is a comparison of these two different approaches to systematically describing individual differences in people.

## Theories of Temperament

Temperament is thought to be the core basis for infants and young children when we describe characteristics of emotional reactions. Temperament refers to the biologically-based emotional factors of what is thought later to develop into personality traits (Buss & Plomin, 1984a & 1984b). In other words, an individual is born with characteristics of temperament and later develops personality traits based on experiences and environmental factors. Consensus has been reached about one aspect of temperament, and that is that it is a set of related traits rather than one trait (Goldsmith, et al., 1987). Another area of consensus among researchers and theorists is that emotionality and activity seem to be two of the main dimensions that are present in most of the theories.

A number of different theories or models of temperament have been proposed over the years. Those with a substantial basis in empirical research will be reviewed in this paper. The forerunner to all other theories is that described by Thomas and Chess (1977), which included nine separate dimensions. Buss and Plomin (1984b) proposed an alternative model with three large domains, and Rothbart and Derryberry (1981) have described a theory, with subsequent revisions, that also includes three broad dimensions or factors.

Thomas and Chess. Thomas and Chess (1977) first explored the concept of temperament and were the forerunners of developing a theory, which based temperamental characteristics on behavior. The core of the theory is the how and why of an individual's behavior rather than the motivation or ability level. Thomas and Chess explain temperament as an individual attribute that may exist in any age person, not just infants,



but it certainly starts in infancy (Thomas & Chess, 1977). For example, temperament in a particular child is shown in the intensity of how he or she performs a task, the expression of his or her mood while doing so, and the way he or she adapts to the task.

Temperament is viewed as an attribute of the child that mediates the effects of the environment (Goldsmith, et al., 1987).

According to Thomas and Chess, behavior is an interaction between temperament, motivation, and abilities, and it is an important determinant of the cause of the behavior. It is reasoned that temperament is expressed in response to an external demand (Thomas & Chess, 1977). Temperament is also seen as a bidirectional influence in which the environment influences the child's temperament and the child then influences the individuals in his surrounding life (Chess & Thomas, 1959). When developing a temperament theory and model, Thomas and Chess interviewed parents for descriptive reports of 22 infants' behavior. From this research they developed a theory of temperament that consisted of nine dimensions of behavior. The nine factors are mood, approach-withdrawal (ease of approaching people and situations), intensity (degree of affect when pleased, displeased, happy, sad), threshold (amount of stimulation required for responding), rhythmicity (regularity of sleeping, eating and toileting), distractibility, attention span, persistence (ease of being distracted), activity (degree of energy), and adaptability (ease of tolerating change in routine or plan) (Thomas & Chess, 1977). Thomas and Chess also identified three clusters of traits or temperamental patterns that appeared after factor analysis in their research. These patterns or clusters include the easy, difficult and slow-to-warm-up temperament.

Thomas and Chess (1977) used their model of temperament as a way to evaluate children's difficulties and functioning at home and school. Temperament is also seen as a way to help parents respond and parent their children in more positive ways if necessary (Goldsmith et al., 1987). Understanding the temperament of the child can help in parenting and understanding the parent's response to the child.

Buss and Plomin. Buss and Plomin (1984b) developed a theory of temperament based on research in which they defined three traits of temperament: emotionality, activity, and sociability (EAS). The theory is focused on the early appearance of temperament traits as well the heritability of the traits. Traits of temperament appear in infancy within the first year of life according to Buss and Plomin (1984b).

Within the theory developed by Buss and Plomin (1984b), the first of the three traits is emotionality, which is similar to distress. The range of this trait goes from intense emotional reactions, such as crying and tantrums, to lack of reaction. The second trait is activity and involves tempo and vigor, which includes lethargy in individuals all the way to hyperactive behavior. The last of the traits is sociability and is seen in an individual as the preference for being with others or being alone (Goldsmith, et al, 1987). Organizing temperament in these categories allows us to view them as stable; however, they will change and differentiate under developmental and environmental events over the life span.

Rothbart and Derryberry. In their temperament theory, Rothbart and Derryberry (1981) based temperament on individual differences in reactivity and self-regulation. Rothbart and Derryberry (1981) define temperament as a stable, biological collection of traits that is different in each individual based on reactivity and self-regulation. Temperament is

seen as the arousability or excitability of behavior. It is also affected by heredity, maturation and experience over time and identifies the variations of motivational and attentional adaptations (Derryberry & Rothbart, 1997). There are several different components to Rothbart and Derryberry's theory of temperament, including reactivity, the activation of motor, affective, autonomic, and endocrine systems, and self-regulations, which refers to the process of modulation of reactivity. This involves attention, approach-withdrawal, inhibition, and self-soothing. They expanded this theory of temperament to include dimensions that could be used to identify temperament at younger ages, including infants (Rothbart & Derryberry, 1981).

Rothbart (1986) went on to refine this theory with several different dimensions, which are fairly broad in the current theory. The theory is also based on data provided by parent responses (Rothbart, Ahadi, Hershey, & Fisher, 2001). There are three broad dimensions in Rothbart's theory that consist of surgency, negative affectivity and effortful control. Surgency/extraversion consists of subtraits such as activity level/energy, high intensity pleasure, impulsivity, positive anticipation, shyness, and sociability. Subtraits in the broad category or dimension of negative affectivity include discomfort, fear, frustration, motor activation, perceptual sensitivity, sadness, shyness, and soothability. Effortful control includes the traits of attentional focusing and shifting, cuddliness, frustration, inhibitory control, low intensity pleasure, perceptual sensitivity, and positive anticipation.

Rothbart and Derryberry (1981) revised Thomas and Chess' model of temperament after researching the nine dimensions. After studying the Thomas and Chess model of temperament and factor analyzing the results with this model, several of the

traits did not seem to load on any one factor. The study of temperament began to encompass looking at an individual's differences based on reactivity and self-regulation. Reactivity in this model is viewed as the differences in motor arousability, emotionality, and orienting. Self-regulation is a process that moderates or mediates reactivity. Other functions of the model that serve as moderators of reactivity include tendencies toward approach, avoidance or behavioral inhibition, and temperamental effortful control.

Over the years, Thomas and Chess' model of temperament with nine dimensions has been revised (Rothbart & Bates, 1998). For example, the original nine dimensions of activity level, mood, intensity, threshold, approach-withdrawal, attention span-persistence, distractibility, adaptability, and rhythmicity identified by Thomas, Chess and Birch (1963) have been revised to three broad factors of temperament which include surgency-extraversion, negative affectivity, and effortful control (Rothbart, et al., 2001). I selected Buss and Plomin's EAS measure for this study because it is based on the theory that temperament first appears in infancy and seems to be inherited (Buss & Plomin, 1975). Buss and Plomin (1975) regarded temperament as the building block of personality and thus, developed a measure of temperament based on their theory.

### Comparing Personality and Temperament

Throughout the literature there is debate about the similarities and differences between temperament and personality. Temperament has been regarded as being similar to personality, an element of personality, or a separate construct all together.

Different names exist for similar dimensions in both temperament models as well as personality models (Buss & Plomin, 1984b; Costa & McCrae, 1992a; Hedwig, 1995; Rothbart & Derryberry, 1981; Thomas & Chess, 1977). Some researchers have

suggested that it is matter of language or semantics or that there is not a unified language between the camps of temperament and personality (Rothbart, 2004; Teglasi, 1995).

There has also been mention in the literature that empirical data have failed to differentiate between temperament and personality on the basis of biological factors (Teglasi, 1995). It has also been difficult to study either concept in young children because informants about the behavior of young children can only be caregivers.

Conversly, temperament and personality have been seen as different constructs, with temperament arising from genetic endowment and being something that an individual is born with, and personality is something that is developed through experiences (Rothbart, Ahadi, & Evans, 2000; Strelau, 1987). It may be perhaps that the methods of gathering information from participants influences the way researchers have thought about both concepts. For example, older children and adults are able to talk about their experiences and young children are only observed by those individuals closest to them so it is difficult to determine if it is experience influencing traits or if those traits are really based on genetic endowment. Studies conducted by Thomas and Chess (1977) provided indication that temperament features could be identified in early childhood, a finding consistent with results of studies conducted by Buss and Plomin (1984b) and Rothbart and Derryberry (1981).

There have been many issues with the definition of temperament and each theorist seems to view and research the construct differently. Personality has been viewed at times as a different construct from temperament. Many times studies conducted have also shown the two constructs to have similar traits or dimensions or to be linked depending

on the theoretical basis (Hagekull & Bohlin, 1998; McCrae, et al., 2000; Rothbart & Ahadi, 1994; Rothbart & Derryberry, 1981).

Temperament has been seen as the basic building block of personality, and personality has been viewed by researchers as a broader construct encompassing more traits such as intelligence, values, beliefs, and so forth. (Goldsmith, et al., 1987; Hagekull & Bohlin, 1998). The temperament component has also been viewed as comprised of traits that are genetic, which is one of the distinguishing characteristics from personality traits. Both temperament and personality have been described as inherited and acquired (Goldsmith, et al., 1987).

Both research traditions have several commonalities, such as the focus on individual differences, the use of the same type of instruments and analyses, and the results from the assessments and analyses in all cases yield traits or factors that describe individual differences. Both temperament and personality have typically been based on a trait approach no matter on which the theory is based. (Strelau, 1987). However, personality has also been viewed in factors. Current research suggests that personality traits subsume temperament traits (Goldberg, 1993; McCrae, et. al., 2000).

Researchers Digman and Shmelyov (1996) used the FFM and temperament measure with Russian school-age children and concluded that temperament was the basis of personality. Teachers rated children on 60 different characteristics on four different forms all corresponding with FFM. Teachers had to determine if the characteristic that they were rating on each child was present in a small degree or not at all to present to a very high degree. Ratings were then standardized to control for individual differences in use of the scales. The scores were then correlated and factor analyzed.

The researchers found that FFM was replicated with the exception of the Neuroticism scale. The five components of the FFM were recognizable in other cultures and languages such as extraversion, openness, agreeableness, and conscientiousness except for the Component 4, Neuroticism (Emotional Stability versus Emotional Instability).

In a large-scale multi-cultural study, Kohnstamm, Halverson, Mervielde, & Havill (1998) elicited free descriptions of children by their parents. Data were collected in seven countries and included over 46,000 descriptive statements of about 2,400 different children. Each descriptor was placed into 1 of 14 categories, which were derived from the literature on individual differences in children. Specifically, the five factors of the FFM were represented, as were key temperament dimensions such as rhythmicity, as well as other categories such as illness, family relations, and so forth. The vast majority of the descriptors fell into the first 5 categories. That is, the FFM was seen as adequately representing more than 85% of the descriptions in all seven countries. This impressive study highlights the question of the usefulness of traditional temperament theories, given the emergence of an over-arching personality model with compelling empirical support and pervasive acceptance in the field.

This research is important to the current study in that when parents in several different countries around the world were asked to describe their preschoolers personalities, their free descriptions of their children's personalities were representative of the FFM of personality (Kohnstamm, et. al., 1998). Typically, researchers and theorists have described preschoolers with characteristics that would be considered temperament rather than personality. In the current study I investigated how teachers view and perceive

preschoolers through measures that compare preschooler's personality as well as temperament.

### Preschool Personality Measure

The M5-PS is a research instrument derived from an adult scale, the M5-336 Personality Questionnaire (McCord, 2002). Briefly, the M5-336 uses the subset of items from Goldberg's (1999) International Personality Item Pool (IPIP) (2001) item set that constitute an analog of the NEO-PI-R (Costa & McCrae, 1992b). The M5-336, thus, provides a public domain measure of the FFM, and the open nature of the IPIP project allows researchers to modify items, scales, and so forth, free of copyright concerns. The 336 items were reviewed by the current author with regard to their appropriateness for the preschool population. Many items were eliminated as developmentally inappropriate (e.g., "Am politically liberal"), and others were modified. All items were re-worded slightly to reflect the third-person perspective. The result of this process was a 156-item preliminary scale (labeled the M5-PS-X) which included at least 20 items from each of the personality domains (N, E, O, A, and C).

The next step was to have the 156 items rated by a panel of judges as to their relevance for the preschool age group. A group consisting of early childhood educators, preschool teachers, and parents of preschool-age children provided the ratings. The raters were asked to assess each item independently using a five-category Likert scale, labeled: Totally Irrelevant, Somewhat Irrelevant, Neither, Somewhat Relevant, and Very Relevant. Raters were asked to think of a specific child or group of children while determining each item's relevance or appropriateness for the particular quality listed. Items were sorted by average "relevance" rating using data from all raters, and 90 items



were selected for the final questionnaire. The final number was chosen partially within consideration of length of total questionnaire. A preschool teacher should be able to complete a 90-item scale in 10 minutes. Adjustments were made to include 18 items from each of the five personality domains, based upon original item association with the adult scale.

The M5-PS is currently in the next stage of development, which consists of collecting completed questionnaires for the purpose of verifying the factor structure of the scale. Confirmatory factor analysis is expected to verify that the five factors of the FFM are adequately measured by the M5-PS in the 3- and 4-year old population. The researcher will continue to develop preliminary norms, though for the purposes of the present study norms will not be possible. Internal reliabilities were computed for the five subscales as a part of this project.

#### Preschool Temperament Measure

The Emotionality, Activity, Shyness, and Sociability (EAS) Temperament Scale, Buss and Plomin (1984b) will be used in the current study. The EAS Temperament Scale uses behavioral descriptions that are more generally worded than other temperament measures (Hagekull, 1994). Also, the four dimensions used on the scale emotionality, activity and shyness and sociability, are considered to have genetic origin.

When describing the four scales meaning, Buss and Plomin (1984b), described emotionality as general distress behaviors indicating negative emotionality pertaining to the components of fear and anger. Activity was described as the tempo and vigor in the child's movements, shyness referred to behaviors with acquaintances or strangers and sociability was characterized as the tendency to affiliate with others. The underlying

philosophy of the scale is that temperament is biological in origin; however, it is not fixed for life and will vary under the influence of development events and environmental force.

Reliability for the EAS was calculated on identical twins for each temperament category by gender. Ninety-one mothers of identical twins completed a questionnaire for each twin in the study, thus, 182 children were rated by the mothers. Eighty-six percent of the children were under the age of six years old. Correlation coefficients were conducted by for the participants in the study. Correlation coefficients for males for the following scales of emotionality, activity, and sociability were .68, .73, and .65, respectively and for females was .60, .50, and .58, respectively (Buss & Plomin, 1975).

#### Statement of the Problem

Theorists and the researchers to date have not reached consensus as to the differences between temperament and personality in young children. Furthermore, no one theory of temperament or personality has been as established as a way to look at young children. Research conducted in this area often looks at similar behaviors in young children and even describes traits of young children in a similar way, but often it is assumed that temperament and personality are different constructs.

The purpose of the present study is to compare and contrast measures of temperament and measures of personality in the same sample of preschool children. In this study, daycare and preschool teachers will answer questions about individual children's characteristics. The main reason to gather information from teachers about young children in their care is because teachers continually interact with and observe groups of same-age children. Not only do they interact and observe same-age group children, but they know individual children within the group well.

The following hypotheses are suggested: 1) it is predicted that the Sociability Scale on the temperament measure (EAS) will positively and significantly correlate with the Extraversion Scale on the personality measure (M5-PS); 2) it is predicted that the Sociability Scale on the temperament measure (EAS) will positively and significantly correlate with the Agreeableness Scale on the personality measure (M5-PS); and 3) it is predicted that the Emotionality Scale on the temperament measure (EAS) will significantly correlate with the Neuroticism Scale on the personality measure (M5-PS).

## Chapter 3

### Method

In this study, I collected data on temperament and personality variables of 3- to 5-year-old children based on ratings by their classroom teachers. The primary analyses consisted of correlations between temperament characteristics and personality traits.

#### Participants

Participants in this study were 103 3, 4, and 5-year-old children who attended preschool. Their teachers were the informants and were asked to rate children on measures of personality and temperament. Teachers were asked to rate approximately 103 3, 4, and 5-year-old children in daycare and preschool classrooms in a daycare program in the state of North Carolina. Classrooms were part of an established daycare center that receives public funding from the state rather than home daycares or children who stayed with babysitters. Children were from a variety of socioeconomic levels, but primarily were from rural Appalachia. Demographic information was gathered about the children and teachers as well.

Demographic Information. Informants were 10 teachers who completed information on 103 preschool age children. The mean age of the teachers was 42.5 years and the average highest degree earned was a two-year community college degree. The average number of years teachers had worked in the field was 10.9; and teachers had worked at the center for an average of 5.12 years. All of the teachers in the current study were female. The average number of children in a class was 17.8.

Participants were the children and 62.1% were 3 to 4 years old and 37.9% were 5 years old. There were 26 males and 77 females. Out of all of the participants, 71.8% were

Caucasian, 9.7% were African American, 6.8% were Hispanic and 11.7% other; the average number of months at the center was 5 months and the number of children with an identified disability was 11 (see demographic form in Appendix A).

Preschool teachers completed three questionnaires for each participant, which included the demographic questionnaire, the M5-PS personality questionnaire, and the EAS temperament questionnaire. Teachers completed all three questionnaires after informed consent was received from the participants' caregivers.

### Instruments

Demographic Questionnaire. I obtained information from the teachers on their age, gender, ethnicity, the number of years that they have been in the field of early childhood, the highest degree they have earned, number of years at the center, and the number of children in their classroom. The researcher asked the teachers to provide some information about the children such as age and gender of the child, ethnicity, presence of an identified disability, and the number of years the child has been at that particular center (see demographic form in Appendix A).

M5-PS. To obtain a description of each child's personality, I asked preschool teachers to complete the M5-PS, a 90-item, practical, broad-band questionnaire designed to provide reliable and valid measurement of the five factors of the FFM in 3- and 4-year-old children (see Appendix B). This scale measures the five factors of the FFM: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Open to Experience (Grist & McCord, 2006). The 18 items measuring each factor are intermixed, with about half reverse-scored, and the scoring rubric is a 5-point Likert-type scale ranging from Very Accurate to Very Inaccurate (see Appendix B).

I selected the M5-PS for this study because it is based on the FFM, the emerging dominant model of human personality, and it can be administered easily in a reasonable time frame by preschool teachers. Although the M5-PS is still in development, currently there are no alternative objective questionnaires based on the FFM designed for use with a preschool population. Other research based on personality with young children is in interview format (Kohnstamm, Halverson, Mervielde, & Havill, 1998) or are not specifically based on the FFM model (Hagekull & Bohlin, 1998).

Reliability and validity data are not available on the M5-PS. However, internal reliabilities were calculated for the present data, and other reliability and validity studies are being conducted currently.

EAS Temperament Survey. Teachers completed a temperament measure in order to obtain a description of each child's temperament. The Buss and Plomin (1984b) temperament scale was used to collect data on children's temperament. The scale provides measurements of four major factors: emotionality, activity, sociability, and shyness. The questionnaire consists of four to five items related each dimension. Teachers rated each item on a scale ranging from 1 (not all characteristic of the child) to 5 (very characteristic). The EAS produces a score for each subscale: emotionality, activity, sociability, and shyness.

I chose the Buss and Plomin (1984) measure mainly for its theoretical basis in heritability, which seemed appropriate since the survey designers looked at personality characteristics along with temperament. Buss and Plomin created these scales by modifying the Colorado Childhood Temperament Inventory (CCTI) (Buss & Plomin, 1984b) (see Appendix C).

Reliability data on the EAS have been consistent across studies and the first form of the test known as the Colorado Childhood Temperament Inventory (CCTI) resulted in internal consistency reliability and correlation coefficients for each of the following the subtests: .80, Emotionality; .82, Activity; and .88, Sociability (Rowe & Plomin, 1977). Shyness was not assessed in the original measure. The EAS has been shown to have moderate internal consistency reliability in other studies, .67, .75, .79, .60 for each of the subscales Emotionality, Activity, Shyness, and Sociability, respectively (Mathiesen & Tambs, 1999).

### Procedure

I contacted the center director and asked her cooperation for the study. We had an introductory meeting and visit to explain the procedure. I supplied introductory letters for all teachers with an informed consent form. The center director distributed introductory letters and informed consent forms to teachers who agreed to be in the study. Those teachers sent home packets to parents. Teachers understood that only children who returned the informed consent form could participate in the study. Once all informed consent forms were returned, I provided teachers with a demographic questionnaire and either the personality measure or the temperament measure. Two weeks later, I gave the teachers the other measure, so equal numbers of each were completed first and last. The teachers were asked to complete the questionnaires within 2 weeks of receiving informed consent from the children's parents or caregivers. Every teacher completed all three questionnaires (the demographic questionnaire, the personality questionnaire, and the temperament questionnaire) for each child in her classroom for whom she had parental or

caregiver consent. Teachers returned the questionnaires to me and I prepared them for data entry.

### Data Analysis

I evaluated all hypotheses using Pearson correlation coefficients because the research questions and the hypotheses concerned the strength and direction of relationships between continuous variables. I chose the Pearson correlation coefficient because the variables that were calculated were two continuous variables. It measures the strength and direction of a linear relationship between the variables (Huck, 2004). I correlated variables of temperament and personality as well as demographic variables. Ten informants provided data on 103 participants which is considered to be a sufficient size in order to reduce Type I error and still have adequate power.

The hypotheses for which I tested were as follows:

- 1.) A significant positive correlation would be found between the Sociability scale on the EAS temperament measure and the Extraversion scale on the M5-PS personality measure.
- 2.) A significant positive correlation would be found between the Sociability scale on the EAS temperament measure and the Agreeableness scale on the M5-PS personality measure.
- 3.) A significant positive correlation would be found between the Emotionality scale on the EAS temperament measure and the Neuroticism scale on the M5-PS personality measure.

For exploratory purposes, I computed Pearson product correlations among all personality, temperament, and appropriate demographic variables. I conducted



Cronbach's Alpha to determine reliability scores on both the M5-PS personality and the EAS temperament measures. I chose Cronbach's *alpha* because it is the most common estimate of internal consistency items in a scale.

## Chapter 4

### Results

The purpose of this study was to compare and contrast measures of temperament and personality in a sample of preschool children. Two survey instruments were used to assess temperament and personality. Data were gathered on 103 preschool children and their preschool teachers completed the surveys.

All results from the data I gathered are reported in this chapter. I calculated Cronbach's alpha for internal consistency on the temperament and personality measures in the study as well as Pearson correlation coefficients for all variables on the questionnaires.

#### Reliability of measures

I calculated Cronbach's alpha to assess internal reliability for each of the five personality trait scales of the M5-PS and each of the four temperament scales of the EAS. Sample size was 103 for all calculations. Reliability estimates for the M5-PS were: Extraversion, .85; Agreeableness, .87; Conscientiousness, .89; Neuroticism, .82; and Openness to Experience, .41. Each of the five M5-PS scales is comprised of 18 items. The first four *alphas* reflect good reliability for an assessment tool. The *alpha* of the .41 for the Openness scale is unacceptably low; this scale will clearly require further refinement as development continues with the M5-PS. Replication with other samples is warranted, in that these are the first reliability coefficients reported for this new instrument.

Cronbach's alphas for the EAS scales were: Sociability, .74; Shyness, .84; Activity, .86; and Emotionality, .92. Each of the four EAS scales is comprised of five

items. These are considered to be acceptable to good reliabilities and are consistent with previous research (Buss & Plomin, 1984b; Hagekull & Bohlin, 1998).

#### Correlations between the M5-PS and the EAS scales

I performed correlational analyses to evaluate the three primary hypotheses of this study. First, as hypothesized, there was a significant positive correlation between the Sociability scale of the EAS and the Extraversion scale of the M5-PS ( $r = .672, p = .000, N = 103$ ). The first hypothesis was thus strongly supported by the data. Second, there was a significant and strong positive correlation between the Emotionality scale of the EAS and the Neuroticism scale of the M5-PS ( $r = .674, p = .000, N = 103$ ). The third hypothesis, that there would be a significant positive correlation between the Sociability scale of the EAS and the Agreeableness scale of the M5-PS, was not supported by the data ( $r = .031, p = .755, N = 103$ ).

For exploratory purposes, I calculated correlations on the demographic variables with the M5-PS personality measure and the EAS temperament measure. All demographic correlations are presented in Table 1. With regards to the demographic variables, a teacher's years of experience had mild to moderate correlations with the temperament Activity scale and the personality Extraversion and Neuroticism scales. The teacher's age mildly correlated with the Emotionality scale on the temperament measure and the child's age correlated mildly with the Openness scale on the personality measure. The number of children in a teacher's classroom mildly correlated with the Activity scale on the temperament measure. These correlations are mildly significant and these relationships are not seen as conceptually meaningful or readily interpretable.

**Table 1: Correlations between Demographic Variables and M5-PS and EAS Scales**

Demographic Variables						
		Teacher Age	# Years in EC	#children	# years at center	Child Age
EAS	Sociability	.072	-.075	.193	-.095	.099
	Shyness	.073	.118	-.066	.127	-.100
	Activity	-.098	-.196*	.199*	-.096	-.160
	Emotionality	-.203*	.009	.058	-.044	.032
	Extraversion	-.141	-.368**	.184	-.094	.100
M5-PS	Agreeableness	-.050	-.124	-.120	.129	.009
	Conscientiousness	-.080	-.128	-.038	.194*	.136
	Neuroticism	.087	.213*	-.003	-.078	-.117
	Openness	-.144	-.170	-.041	-.018	.201*

\* $p < .05$ , \*\* $p < .01$ . All correlations based on full sample of 103 participants.

I also computed Pearson correlation coefficients between each of the four EAS scales and each of the five M5-PS scales. All correlations are presented in Table 2, with statistically significant correlation coefficients indicated with an asterisk. Each of the five personality trait scales exhibited a significant correlation with at least one of the temperament scales. The first factor, Extraversion, had high significant correlations with three of the four temperament scales (Sociability, Shyness, and Activity). The Neuroticism scale correlated strongly with Emotionality, as noted above, and moderately with Shyness and negatively with Sociability. The Agreeableness scale correlated moderately and negatively with two temperament scales (Activity and Emotionality), and the Openness scale correlated moderately with the other two temperament scales (Sociability, and negatively, with Shyness). The Conscientiousness scale correlated with only one temperament measure, Emotionality, to which it correlated moderately and negatively.

**Table 2: Correlations between M5-PS and EAS scales**

		EAS			
		Sociability	Shyness	Activity	Emotionality
M5-PS	Extraversion	.672**	-.802**	.678**	-.134
	Agreeableness	.031	-.034	-.332**	-.491**
	Conscientiousness	.096	-.043	-.195*	-.426**
	Neuroticism	-.314**	.380**	.009	.674**
	Openness	.423**	-.440**	.165	-.032

\* $p < .05$ , \*\* $p < .01$ . EAS scales across top, M5-PS scales vertical. All correlations based on full sample of 103 participants.

I squared primary correlation coefficients to evaluate the amount of variance each variable accounted for in the other. It is notable that for the most part  $r^2$  values remained at least in the moderate range.

Other exploratory analysis I computed were Pearson correlation coefficients between the M5-PS scales. All correlations are presented in Table 3. The Extraversion scale exhibited statistically significant correlations with the Neuroticism (negatively) and the Openness (positively) scale. The Agreeableness scale correlated significantly positively with the Conscientiousness and Openness scale and negatively with the Neuroticism. The Conscientiousness scale also correlated positively with the Openness scale and negatively with the Neuroticism scale.

In summary, each of the EAS temperament scales demonstrated significant correlations with at least two of the personality factors, and three of the four

**Table 3: Correlations between M5-PS scales**

M5-PS						
M5-PS		Extrvsn	Agrblnss	Conscntnss	Neurtcsm	Openness
	Extraversion	1	.008	.167	-.390**	.480**
	Agreeableness	.008	1	.728**	-.629**	.219*
	Conscientiousness	.167	.728**	1	-.553**	.506**
	Neuroticism	-.390**	-.629**	-.553**	1	-.342**
	Openness	.480**	.219*	.506**	-.342**	1

\* $p < .05$ , \*\* $p < .01$ . All correlations based on full sample of 103 participants

temperament scales significantly correlated with three of the personality factors. It could be argued that the personality model incorporated into the M5-PS adequately encompasses a traditional view of temperament.

## Chapter 5

### Discussion

As stated in Chapter 1, much of the research in this area has focused on linking temperament in infancy and early childhood to personality in older children and adults (Hagekull & Bohlin, 1998; Rothbart & Ahadi, 1994; Rothbart & Derryberry, 1981). Through this research, it has been suggested that temperament is related to personality and personality is a broader concept which encompasses temperament (Hagekull, 1994). Temperament has also been described as early appearing personality traits, and several researchers have proposed that personality through the FFM subsumes temperament (Hagekull, 1994; McCrae & Costa, 1996). The results of this study strengthen the theory that preschool personality traits subsume temperament as measured through the FFM.

As predicted, Extraversion was positively correlated with Sociability; thus, those preschool children with outgoing personalities were seen by their teachers as also being sociable temperamentally. Associations between Extraversion on the FFM and sociability have been found in past research as well (Elphick, Halverson, & Marszal-Wisniewska, 1998; Hagekull & Bohlin, 1998). Elphick et al. found in their study of parents who gave free descriptions about their children's personalities that the children who were characterized as being extraverts were described as happy and energetic. Extraversion also played a role in social adaptation.

While the Sociability scale of the EAS temperament measure correlated highly with the Extraversion scale on the M5-PS personality measure, it did not correlate significantly with the Agreeableness scale as predicted. The Sociability scale is related more to Extraversion facets than to Agreeableness. For example, one of the five



questions states that, “the child likes to be around people rather than alone.” This scale seems to be tapping into a narrow view of sociability. It does not incorporate the deeper and richer concept of Agreeableness of the FFM as reflected by underlying facets such as trust, warmth, altruism, and modesty.

While the first two hypotheses focus on traits that are normally regarded as positive and adaptive, the last hypothesis deals with traits that can be an early indication of more problematic behaviors and possibly more maladaptive functioning. It was found as predicted that the Emotionality scale of the EAS temperament measure was strongly positively correlated with the Neuroticism scale of the M5-PS personality measure. This finding is consistent with other studies in which researchers measured Neuroticism from the FFM and emotionality in older children, adolescents, and adults (Ahadi & Rothbart, 1994; Hagekull & Bohlin, 1998).

Several researchers consider emotionality to be the underlying temperament system of neuroticism. Another way to view this phenomenon is that the personality characteristic of neuroticism subsumes the temperament characteristic of emotionality (Ahadi & Rothbart, 1994; Hagekull & Bohlin, 1998; Kohnstamm, Halverson, Mervielde, & Havill, 1998). Angleitner, Kohnstamm, Slotboom, and Besevigis (1998) studied parents’ descriptions of the children’s personality on the dimension of neuroticism and concluded that Buss and Plomin’s scale of emotionality could be coded into their dimension of neuroticism.

In the current study, children who were rated high on the Emotionality scale of the temperament measure were also rated high on the Neuroticism scale of the personality measure. If personality is a trait of an individual and how they cope and adapt

to situations and their environment then a child has already developed at a young age a maladaptive coping response to situations.

Other significant correlations were found between the M5-PS personality measure and the EAS temperament measure. The Extraversion scale of the M5-PS correlated negatively with Shyness as well as Emotionality, and positively with the Activity scale. This finding was similar to other research studies that involved temperament in preschoolers and the FFM in children in middle school (Hagekull & Bohlin, 1998). Individuals who are thought to be high in extraversion also tended to score high on the Activity scale and low in Shyness.

In the current study I found similar results within the same preschool population, suggesting that personality traits are present at younger ages than once thought. Children who were rated high in Extraversion on the personality measure, rated high in Activity and low in Shyness on the temperament measure.

Another exploratory finding was that the Agreeableness scale on the personality measure correlated negatively with the Activity and Emotionality scales on the temperament measure. Hagekull and Bohlin (1998) also found in their research of preschool temperament predictions of later personality characteristics. Children who rated high in Agreeableness rated low in activity, low in impulsivity and high in shyness. A child who has temperament characteristics high in emotionality would have low agreeableness. The high end of the temperament characteristic of emotionality consists of getting upset easily, being emotional, reacting intensely and crying and fussing, while a child who rates high on the agreeableness will be described as well-socialized and unselfish (Hagekull & Bohlin, 1998).

The Conscientiousness scale of the M5-PS correlated negatively with the Emotionality scale of the EAS. The personality characteristic of conscientiousness has been described as the will to achieve, responsibility, orderliness, and dependability (Hagekull & Bohlin, 1998). In young preschoolers, the characteristic of conscientiousness may be seen as finishing work that was started, sticking to tasks, getting things just right, attending to details, keeping workspace neat, and so forth. Thus, it is likely that a child, who was rated by his or her teacher as high in temperament characteristics of emotionality, as described above, would also be rated by that teacher as low in personality characteristics of conscientiousness.

The Neuroticism scale of the M5-PS correlated negatively with the Sociability and Shyness scales of the EAS. The personality trait neuroticism reflects anxiety and an individual's degree of adjustment or maladjustment. So children who rated high in neuroticism are seen as having some difficulty with adjusting in the classroom and to other situations while rating low in the areas of sociability and shyness. Again, Buss and Plomin (1984b) state that the Sociability scale relates more to extraversion and consists more of surface sociability factors such as: child is sociable, child takes a long time to warm up to strangers, and child is friendly with strangers. On a similar note, the Shyness and Sociability scales overlap significantly in concept due to the fact that Buss and Plomin (1984b) state that the scales seem to be measuring a similar construct. Therefore, it is not surprising that both would negatively correlate with the Neuroticism scale of the M5-PS.

The Openness scale of the M5-PS correlated positively with the Sociability scale as well as negatively with the Shyness scale of the EAS. Similar findings have been

reported by Hagekull and Bohlin (1998). Children who were found with the personality characteristic of openness in middle childhood tended to be preschoolers who were rated as having high sociability. Openness and sociability are in many ways independent characteristics. Openness reflects an individual's openness to new experiences, new environments, etc., and sociability reflects an individual's ability to be around others and how much someone might enjoy other people. Even so, it is reasonable to speculate that a child who is naturally curious and open to a variety of experiences will be more open, sociable and less shy as perceived by a teacher in the classroom.

Exploratory analyses included correlating the temperament and personality variables with demographic variables such as the age of the child and teacher, the gender of the child and teacher, ethnicity of both the child and teacher, number of years the teacher has worked with young children, teacher's highest degree earned, number of years at the center, number of months the child has been at the center and whether or not a child has a disability. No predictions were made with regard to these analyses. Although a few statistically significant, albeit modest, correlation coefficients were obtained, no compelling explanation of the relationships was evident, and merely speculating about underlying causes is not productive.

I used personality dimensions in this study that were derived from research used with adults and older children (Costa & McCrae, 1992a; Costa & McCrae, 1992b; Digman, 1996; Hagekull & Bohlin, 1998). Although a few major studies have supported the existence of the Five Factor Model in preschool children based upon qualitative analysis of free descriptions by parents, this study is the first to use a formal, objective questionnaire based on the FFM, with preschool children rated by their teachers. The

internal reliability coefficients (on 4 of the 5 scales) as well as strong correlations with related and traditional temperament scales suggest a positive role for the M5-PS in future research as noted in Future Research found below.

### Limitations

One significant limitation of the present study is the low Cronbach's alpha for the Openness scale of the M5-PS. The instrument was developed by selecting 18 items for each of the five scales, based on the original item's identification with the factor on the adult scale. It is a significant finding that four of the five scales worked well in this initial effort. With regard to Openness, subsequent analyses will need to involve the examination of the specific item performance. It is possible that a subset of the 18 items will form a more internally consistent measure of the construct. Future research is warranted with regard to all five of the scales to determine within-scale factor structure, item analysis, and so forth. Hopefully, refinements can be developed that will result in a more reliable measure of this fifth factor of the FFM. However, this is indeed the fifth factor based on prior research and it has a history of debate and controversy that goes beyond the scope of the current project (Costa & McCrae, 1992a; Costa & McCrae, 1992b; Digman, 1996; Goldberg, 1999). It is most likely that the underlying construct of Openness to Experience is expressed rather uniquely by preschoolers, and scale modification will be necessary.

As mentioned above, additional research needs to be done on each scale of the M5-PS, despite the good reliability coefficients and concurrent validity coefficients reported here. The inclusion of 18 items per scale allows the possibility of identifying

two or more facets within domains, providing a more detailed description of the child's personality.

Another limitation of this study is that teacher report has been relied on for all data. While they spend many hours a day with children and know children in their care quite well, it may be argued that parents do know their children the best. Thus, future research should be conducted to obtain parent ratings on both the M5-PS and temperament measures.

As mentioned, teacher report was gathered and relied on for all data. However, only 10 teachers were informants in this study. This is a relatively low number of informants for data collection, so results should be reviewed with caution.

The unequal number of males and females is also noted as a limitation. Results should be generalized cautiously.

Another concern is the relatively high intercorrelations among the M5-PS scales.

Theoretically, the five personality factors are independent, though not unnecessarily uncorrelated; however, in adult samples the correlations among the five factors are not generally as high as in the present study. Further refinement of the M5-PS scales to enhance discriminant validity appears warranted.

### Future Research

One purpose of the present research program is to evaluate a child's personality traits at an early age in to establish if there is any predictive value in determining risk factors in preschool children. Thus, future research aimed toward establishing linkages between these early trait measures and later behavioral, emotional, and adaptive problems is needed. For example, it is reasonable to speculate that high Neuroticism scores would

predict emotional problems such as anxiety or depression at an older age. Low Agreeableness scores may predict interpersonal and personality difficulties in later life. Once linkages are established, research should focus on specific benefits of early intervention, based on the child's unique personality trait profile.

More research is needed in the area of developing personality summaries for teachers and parents, so that they would have more information about their child. For example, of the five scales on the M5-PS, teachers and parents could be given information about where a child received high and low scores. Information and understanding about a child's particular behavior facilitates dealing with the behavior. From the personality summaries, intervention techniques could be developed in order to help children who are developing maladaptive personality characteristics. The program of intervention could be used as a preventative measure to help children learn better ways to cope and adapt to the environment and situations.

The individual characteristics measured in this study are theoretically described as "innate dispositions," largely determined by genes. Thus, one might argue that efforts to modify potentially maladaptive traits are of limited value. It can be argued that biology is not destiny, at least not entirely. Our genes seem to determine reaction ranges within which our characteristics can vary, and our experiences in life then influence how our characteristics ultimately take shape, within the reaction ranges. Furthermore, early experiences, at a time the child is most malleable, can have a critical impact. Thus, it is worthwhile to develop a more accurate, detailed, and elaborated view of the individual differences of our youngest children, to relate specific traits to later problems, and to develop precisely targeted early interventions designed to reduce or avoid future

problems. The Five Factor Model of personality appears to be a useful framework for this ambitious program, and the present study is seen as an important first step.



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**Appendix**

## Appendix A

### Background Information

#### *Teacher Information*

1. Age of Teacher \_\_\_\_\_
2. Number of years working with young children \_\_\_\_\_
3. Highest degree earned \_\_\_\_\_
4. Number of children in your classroom \_\_\_\_\_
5. Number of years at this current center \_\_\_\_\_
6. Teacher's Gender \_\_\_\_\_
7. Teacher's Ethnicity: Please circle: Caucasian      African-American      Asian  
 Hispanic                      Other

#### *Child Information*

1. Age of the child
2. Gender of the child
3. Child's Ethnicity: Please circle: Caucasian      African-American      Asian  
 Asian                      Hispanic                      Other
4. Does this child have an identified disability? Yes    No
5. If yes, briefly describe \_\_\_\_\_
6. Number of months or year the child has been in this center?

## M5-PS Questionnaire

Cathy L. Grist and David M. McCord  
Western Carolina University

Child's Name: \_\_\_\_\_ Age: \_\_\_\_\_ M F Date: \_\_\_\_\_  
 Child's Ethnicity (circle one): **White** **Black** **Hispanic** **Asian** **Native American** **Other**  
 Teacher's Name: \_\_\_\_\_ Years of Experience: \_\_\_\_\_

- This is a personality questionnaire, which should take about 10 minutes. There are no right or wrong answers to these questions; you simply respond with the choice that describes the child best.
- Without spending too much time dwelling on any one item, just give the first reaction that comes to mind.
- In order to score this test accurately, it is very important that you answer *every* item, without skipping any. You may change an answer if you wish

M5-PS Questionnaire						
		Innaccurate	Moderately Innaccurate	Neither	Moderately Accurate	Accurate
1	Worries about things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Has a vivid imagination	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Distrusts people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	Completes tasks successfully	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	Gets angry easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	Takes charge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	Seldom gets emotional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8	Breaks rules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Is easily intimidated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	Makes friends easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	Trusts others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	Gets irritated easily	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Likes music	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	Experiences emotions intensely	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	Tries to follow the rules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	Is always busy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	Prefers to stick with things that he/she knows	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18	Is easy to satisfy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	Likes to solve complex problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	Radiates joy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21	Jumps into things without thinking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22	Tries to excel at what they do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23	Is indifferent to the feelings of others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24	Is comfortable in unfamiliar situations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25	Is always on the go	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26	Dislikes changes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27	Can't stand confrontations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28	Has a lot of fun	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29	Is afraid of many things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30	Loves to daydream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31	Is wary of others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32	Sticks to the rules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33	Feels comfortable with him/herself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34	Tries to lead others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35	Is not easily affected by his/her emotions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36	Likes to take his/her time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37	Works hard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38	Seeks adventure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39	Becomes overwhelmed by events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40	Is relaxed most of the time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		Innaccurate	Moderately Innaccurate	Neither	Moderately Accurate	Accurate

M5-PS Questionnaire						Page 2
		Innaccurate	Moderately Innaccurate	Neither	Moderately Accurate	Accurate
41	Does not understand things	○	○	○	○	○
42	Gets upset easily	○	○	○	○	○
43	Does not like crowded events	○	○	○	○	○
44	Knows how to get around the rules	○	○	○	○	○
45	Wants everything to be "just right"	○	○	○	○	○
46	Does not like the idea of change	○	○	○	○	○
47	Loves action	○	○	○	○	○
48	Feels comfortable around other people	○	○	○	○	○
49	Trust what people say	○	○	○	○	○
50	Loves order and regularity	○	○	○	○	○
51	Loves to help others	○	○	○	○	○
52	Is a creature of habit	○	○	○	○	○
53	Yells at people	○	○	○	○	○
54	Plunges into tasks with all their heart	○	○	○	○	○
55	Has a rich vocabulary	○	○	○	○	○
56	Knows the answers to many questions	○	○	○	○	○
57	Knows how to cope	○	○	○	○	○
58	Gets stressed out easily	○	○	○	○	○
59	Acts comfortably with others	○	○	○	○	○
60	Enjoys being part of a group	○	○	○	○	○
61	Leaves his/her belongings around	○	○	○	○	○
62	Tries to influence others	○	○	○	○	○
63	Is concerned about others	○	○	○	○	○
64	Tells the truth	○	○	○	○	○
65	Is interested in many things	○	○	○	○	○
66	Involve others in what he/she is doing	○	○	○	○	○
67	Has frequent mood swings	○	○	○	○	○
68	Experiences very few emotional highs and lows	○	○	○	○	○
69	Does the opposite of what is asked	○	○	○	○	○
70	Insults people	○	○	○	○	○
71	Has difficulty starting tasks	○	○	○	○	○
72	Loses his/her temper	○	○	○	○	○
73	Likes to begin new things	○	○	○	○	○
74	Gets back at others	○	○	○	○	○
75	Gets overwhelmed by emotions	○	○	○	○	○
76	Laughs aloud	○	○	○	○	○
77	Suffers from others' sorrows	○	○	○	○	○
78	Acts without thinking	○	○	○	○	○
79	Adapts easily to new situations	○	○	○	○	○
80	Does't see the consequences of things	○	○	○	○	○
81	Is able to stand up for his/herself	○	○	○	○	○
82	Makes him/herself the center of attention	○	○	○	○	○
83	Amuses his/her friends	○	○	○	○	○
84	Sympathizes with others' feelings	○	○	○	○	○
85	Is easily frustrated	○	○	○	○	○
86	Respects others	○	○	○	○	○
87	Messes things up	○	○	○	○	○
88	Is demanding	○	○	○	○	○
89	Starts conversations	○	○	○	○	○
90	Finishes what he/she starts	○	○	○	○	○
		Innaccurate	Moderately Innaccurate	Neither	Moderately Accurate	Accurate

## Appendix C

### EAS Temperament Scale

1. Tends to be shy				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
2. Is always on the go				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
3. Cries easily				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
4. Likes to be with people				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
5. Makes friends easily				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
6. When child moves about, he/she moves slowly				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
7. Prefers playing with others rather than alone				
1	2	3	4	
5				
Not characteristic		Somewhat characteristic		Very characteristic
8. Tends to be somewhat emotional				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic

9. Is very socialable				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
10. Is off and running as soon as he/she wakes up				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
11. Often fusses and cries				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
12. Finds people more stimulating than anything else				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
13. Takes a long time to warm up to strangers				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
14. Is very energetic				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
15. Gets upset easily				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
16. Is something of a loner				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
17. Is very friendly with strangers				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic
18. Prefers quiet inactive games to more active ones				
1	2	3	4	5
Not characteristic		Somewhat characteristic		Very characteristic

19. Reacts intensely when upset

1

2

3

4

5

Not  
characteristic

Somewhat  
characteristic

Very  
characteristic

20. When alone, child feels isolated.

1

2

3

4

5

Not  
characteristic

Somewhat  
characteristic

Very  
characteristic



**Vita**

Cathy Grist Litty was born in Fayetteville, GA on May 8, 1969. She was went to elementary, junior and high school in Fayette County. She graduated from Fayette County High in 1897. She received a B.A. in psychology in 1991 from Auburn University and M.A. in clinical psychology from Western Carolina University in 1994. Cathy received her doctorate in early childhood education at the University of Tennessee, Knoxville, TN., in December, 2007.