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The Adult Scale Of Parental Attachment-Short Form: Item Selection, Factor Structure, And Psychometric Properties

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THE ADULT SCALE OF PARENTAL ATTACHMENT-SHORT FORM: ITEM SELECTION, FACTOR STRUCTURE, AND PSYCHOMETRIC PROPERTIES

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ABSTRACT

The purpose of this study was to examine if an abbreviated version of the Adult Scale of Parental Attachment (ASPA; Snow, Sullivan, Martin, & Helm, 2005) could be developed with an emphasis on the instrument's item selection, factor structure, and psychometric properties. The ASPA, building upon attachment theory, is a self-report measure that assesses individuals' patterns of relating based on their relationships with both mother and father figures in childhood. Utilizing the conceptual underpinnings of Classical Test Theory and factor analysis, a 40-item version of the ASPA (called the ASPA-SF) was created from 1,075 archived responses through a test construction and test tryout. Building upon this procedure, the substantiation of the ASPA-SF was established through confirmatory factor analysis and validity to the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979) with a separate group of 250 archived responses. Lastly, the theory of the instrument was tested on a population of 222 prison participants to evaluate the factor structure and psychometric properties. While the reliability of the instrument was maintained, the validity of the ASPA-SF could not be verified in working with a prison population. Due to the 84-item length of the original ASPA, the study was significant as an abbreviated version of the ASPA has the potential to save time for both the participant and administrator, and contribute to counseling research literature on patterns of relating.

Keywords: attachment theory, instrument development, self-report, patterns of relating

DEDICATION

As John Donne (1624) famously penned, “No man is an island; entire of itself.” This dissertation is dedicated to all of those who have invested in my life. Without your contributions, I would never been able to accomplish this feat. In particular, I also want to extend to my family and friends a sense of gratefulness for all of the support they have given me throughout this journey.

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ACRONYMS

Adjusted Goodness-of-Fit	AGFI
Adult Attachment Interview	AAI
Adult Attachment Projective	AAP
Adult Attachment Questionnaire	AAQ
Adult Attachment Scale	AAS
Adult Scale of Parental Attachment	ASPA
Adult Scale of Parental Attachment-Short Form	ASPA-SF
Attachment Style Questionnaire	ASQ
Classical Test Theory	CTT
Comparative Fit Index	CFI
Confirmatory Factor Analysis	CFA
Current Relationship Interview	CRI
Experiences in Close Relationships	ECR
Experiences in Close Relationships-Relationship Structure Questionnaire	ECR-RS
Exploratory Factor Analysis	EFA
Goodness-of-Fit Index	GFI
Incremental Fit Index	IFI
Internal Working Models	IWM
Item Response Theory	IRT
Likelihood Ratio Test	LRT

Maximum Likelihood	ML
Minimum Average Partial	MAP
Model chi-square	$\chi 2$
Normed Fit Index	NFI
Parallel Analysis	PA
Parental Bonding Instrument	PBI
Principal Components Analysis	PCA
Principal Axis Factoring	PAF
Reciprocal Attachment Questionnaire	RAQ
Relationship Questionnaire	RQ
Relationship Styles Questionnaire	RSQ
Revised Adult Attachment Scale	RAAS
Revised Experiences in Close Relationships	ECR-R
Root Mean Square Error of Approximation	RMSEA
Standardized Root Mean Square Residual	SRMR
Tucker-Lewis Coefficient	TLC

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CHAPTER ONE

INTRODUCTION

Attachment theory (Bowlby, 1973, 1980, 1969/1982, 1988; Ainsworth, Blehar, Waters, & Wall, 1978; Main, Kaplan, & Cassidy, 1985) is a broad system premise of social development that explains the origins of the patterns of close interpersonal relationships. According to attachment theorists, the interplay between environmental (particularly parental) and hereditary influences in early development produces individual differences in patterns of attachment behavior. To measure these individual differences in patterns of attachment behavior, attachment theorists have created various interview protocols and self-report instruments over the last thirty years (Ravitz et al., 2010). The Adult Scale of Parental Attachment (ASPA; Snow, Sullivan, Martin, & Helm, 2005) was developed to obtain information concerning an adult's memory perception of patterns of relating to mother and father figures in childhood. Due to the length and, thus, time associated with completing this 84-item instrument, researchers have been reluctant to utilize the ASPA in empirical studies. For this reason, the proposed study will develop an abbreviated version of the ASPA with special attention in regards to the instrument's item selection, factor structure, and psychometric properties.

In the late 1960s, Bowlby's work with children and families formed the initial scaffold for developing attachment theory. Bowlby's research suggested that the quality of early attachment experiences had lasting effects on child development (1973, 1977, 1969/1982). In particular, Bowlby acknowledged three mechanisms of the attachment relationship: a) proximity maintenance with the caregiver; b) caregiver safe haven for infants; and c) a secure base, from

which the infants could explore their environment and engage in activities unrelated to attachment (Bowlby, 1979, 1969/1982). According to Bowlby, these three mechanisms functioned as the "how" and "why" behind the attachment process.

Later Ainsworth, Blehar, Waters, and Wall (1978) complemented Bowlby's research by describing individual differences that transpired in the development of these early attachment relationships. The researchers examinations produced the categorization of three different attachment styles: secure, anxious, and avoidant. These categories were conceptualized within a two-dimensional space, with anxiety and avoidance as the two dimensions. As research evolved, the three classifications were augmented by the inclusion of a fearful attachment style (high anxiety, high avoidance), yielding a four-category categorization system (Bartholomew & Horowitz, 1991).

These attachment styles, according to attachment theorists, are formed in infancy and are theorized to continue influencing a person's personal and public domains over the life course (Bowlby, 1988; West & Sheldon-Keller, 1994; Hazan & Shaver, 1994). According to Hazan and Shaver (1994), the internal working models that materialize in childhood offer the reasoning by which individuals consider their personal relationships and create expectations about future relationships in adulthood. West and Sheldon-Keller (1994) similarly referenced that the styles of relating formed by individuals early in life often remain the same due to ensuing attachment experiences that reinforce their previous attachment patterns. According to attachment theorists, this cognitive framework affects how an individual functions in close relationships throughout the life course (Ainsworth 1989; Bowlby 1973, 1980, 1982).

Over the last 35 years, various assessments have been designed to measure individuals' attachment styles and patterns of relating. While there are many approaches to measuring and

classifying attachment styles, all instruments distinguish patterns of secure attachment and subtypes of insecure attachment. Ainsworth et al. (1978) created the first measurement of attachment known as the Strange Situation, which has provided a foundation for attachment assessments to build upon.

Over the last 30 years, various interview and self-report measurements have been created to assess attachment styles and patterns of relating. The Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984/1985/1996) was the first instrument developed to evaluate adult attachment through individuals discussing childhood experiences. Historically, the AAI has become the prevalent method employed to assess mental representation of attachment in adults. Within the last 25 years, research has also verified the effectiveness of self-report measures in examining and substantiating central conjectures about attachment theory. Hazan and Shaver (1987) created the first self-report questionnaire to measure attachment in adults through a forced-choice structure. Since Hazan and Shaver's instrument, many other self-report instruments have been developed to assess attachment styles and patterns of relating.

One of the more recent self-report measures in attachment, the Adult Scale of Parental Attachment (ASPA; Snow et al., 2005), has been employed in various research studies with indications of high validity and reliability (e.g., Mother-Safe = .92; Mother-Dependent = .74; Mother-Parentified = .67; Mother-Fearful = .75; Mother-Distant = .86; Father-Safe = .91; Father-Dependent = .65; Father-Parentified = .81; Father-Fearful = .82; Father-Distant = .91). While the ASPA appears to be a reliable and valid measure, the length of the instrument (i.e., 84 items) can be problematic in some research applications. In particular, the utility of the current version of the ASPA could be diminished somewhat by the measurement's length for both the participant and researcher. For the participant, the main difficulty entails the questionnaire usually taking

30-45 minutes to complete. In addition, if the ASPA is administered to populations other than college students (e.g., older adults), participants may have difficulty remaining focused for the length of time required to complete the considerable number of items contained within the measure. Similarly, if the ASPA is employed in survey research (e.g., mail survey, internet survey, or telephone interview), the large number of items in the measure may decrease the research compliance rate and participants' motivation in responding to the questionnaire. For the researcher, the original length of the ASPA can be cumbersome to administer and time-consuming to score. Thus, the results of these occurrences can provide limitations in research application. To address these problems, the purpose of this study is to develop an alternate, short form version of the ASPA with a focus on item analysis, examining the factor structure, and determining the psychometric properties.

Research Questions

In order to develop an abbreviated version of the ASPA, an exploratory factor analysis, item analysis, confirmatory factor analysis, and discriminant validity will be employed in this study. The research questions are as follows:

Research Question 1: Can the ASPA be modified in to an abbreviated version while maintaining the instrument's internal consistency reliability?

Research Question 2: Can a confirmatory factor analysis verify the factor structure of the ASPA-SF, and thus, items within the instrument?

Research Question 3: What is the concurrent and discriminant validity of the ASPA-SF when examined with the Parental Bonding Instrument on the same participant group?

Research Question 4: If the ASPA can be modified, how will the ASPA-SF factor structure emerge in a prison population?

Definition of Key Terms

Attachment Style: Refers to the individual's mode of being in relationships, which is based on expectations regarding others' availability, and feelings of worthiness of the self to be helped by others. Levy, Blatt, and Shaver (1998) described how attachment styles (Ainsworth et al., 1978) developed in infancy correlate with personality styles later in life.

1. Secure Attachment Style: The most positively viewed style of attachment—the secure type—is characterized by comfort with autonomy and intimacy. These individuals have a positive opinion of both self and others.
2. Insecure Attachment Styles: Preoccupied, fearful, and dismissing styles are all types of insecure attachment. Individuals with insecure attachments have negative perspectives on self, others, or both.

Research on the ASPA (Snow et al., 2005) uncovered five patterns of relating to parental figures. These patterns of relating include the following:

1. Safe: This pattern refers to the extent to which the child felt the relationship provided comfort and security. A child with a safe pattern may have experienced confidence in the parent's availability and support.
2. Dependent: This pattern measures the extent to which the child felt a need for the parent to be available. A child with a dependent pattern of relating may have experienced helplessness and uncertainty when the parent was not available.
3. Parentified: This pattern measures the extent to which the child felt responsible for meeting the parent's needs. A child with this parentified pattern of relating may have experienced feelings of importance and enjoyed being helpful.

4. Fearful: This pattern measures the extent to which the child experienced a fear of abandonment and a belief that the parent would not be available for support. A child with a fearful pattern of relating may have experienced anger toward or frustration with the parent.
5. Distant: This pattern of relating measures the extent to which the child experienced disappointment in the parent's support and availability. A child with a distant pattern of relating may have experienced a need to distance from the parent and may have experienced anger toward the parent.

Attachment Theory: A way of conceptualizing the propensity of human beings to make strong affectional bonds to particular others and of explaining the many forms of emotional distress and personality disturbance, including anxiety, anger, depression, and emotional detachment, to which unwilling separation and loss give rise (Bowlby, 1988, p.5).

Classical Test Theory: statistical analyses (e.g., coefficient alpha, percent agreement, total summed scores) that provide summary information about the functioning of a psychological measure. Historically, classical test theory has been viewed as the "gold standard" for summarizing the technical adequacy of an instrument's scores (Embretson & Reise, 2000).

Development of a Measure: the development of an instrument, commonly with a concise or obvious goal to meet the typical standards of validity, dependability, norms, and other aspects of test standardization.

Factor analysis: a customary method utilized in the development of tests that measure individual differences. Factor analysis was developed to construct matrices, to define correlations between these outcomes, and to discover the factors that are responsible for these results (Thompson, 2004). There are two types of factor analyses:

1. Exploratory Factor Analysis (EFA): a statistical analysis that is commonly employed to learn the factor structure of a measure and examine the measure's internal reliability.
2. Confirmatory Factor Analysis (CFA): a statistical analysis employed to test whether measures of a construct are consistent with a researcher's understanding of the nature of that construct (or factor; Bollen, 1989).

Item Analysis: a statistical analysis that examines the performance of items considered individually either in relation to some external criterion or in relation to the remaining items on the test (Thompson & Levitov, 1985).

Conceptual Underpinnings for the Study

The conceptual underpinnings for this study are based upon Classical Test Theory and factor analysis. As the research questions for this study are focused on the development of an abbreviated version of the ASPA, the conceptual underpinnings of Classical Test Theory and factor analysis are essential elements; the suppositions lay the groundwork for the item selection and psychometric properties of the ASPA-SF. The following sections will evaluate the basic premises of Classical Test Theory and factor analysis and, thus, the reasoning for their inclusion within this study.

Classical Test Theory. Classical Test Theory (CTT) is a body of related psychometric theories that predict outcomes of psychological testing, such as the difficulty of items or the ability of test-takers (Cohen & Swerdlik, 1998). In general, the purpose of CTT is to understand and improve the reliability of psychological tests. The term classical refers not only to the chronology of these models, but also contrasts with the more recent psychometric theories, generally referred to collectively as Modern test theory, and also referred to as Item Response Theory (IRT; Kline, 2005). Croker and Algina (1986) referenced that to understand CTT, an

individual should first be introduced to the five measurement problems common to all psychological assessments that all test developers must cope with. First, Croker and Algina cited that there is no single approach to the measurement of any construct that is universally accepted. Second, the researchers referenced that psychological measurements are usually based on limited samples of behavior. Third, Croker and Algina mentioned that the measurement is always subject to error. Fourth, the authors noted that the lack of well-defined units on the measurement scales poses a problem. Lastly, Croker and Algina stated that psychological constructs cannot be defined only in terms of operational definitions, but must also have demonstrated relationships to other constructs or observable phenomena.

The conceptual underpinnings of CTT had an emphasis in the formation of the original ASPA, as the supposition provided the basis for building the instrument's reliability and validity. Likewise, CTT will provide the model in this study for investigating the ASPA-SF test scores. In particular, CTT presents an explanation of the ASPA-SF's reliability through utilization of Cronbach's alpha. The intent of employing Cronbach's alpha will be to measure the internal consistency of the ASPA-SF and, therefore, make a statement about the general quality of the test scores (Croker & Algina, 1986). As the general premise of CTT establishes, the higher the reliability, the better the test. Hence, the proposed study seeks to evaluate the reliability of the newly developed ASPA-SF through CTT for the verification of the instrument's exploitation.

Factor Analysis. The other conceptual underpinning that is essential to the development of an abbreviated version of the ASPA is factor analysis. Factor analysis is a customary method utilized in the development of tests that measure individual differences (Cattell, 1950). In general, there are two types of factor analyses: exploratory and confirmatory. An exploratory factor analysis (EFA) is generally utilized to learn the factor structure of a measure and examine the

measure's internal reliability. In particular, EFA is regularly suggested when researchers have no hypotheses about the nature of the underlying factor structure of their measure. A confirmatory factor analysis is similar to EFA in that both statistical procedures are utilized to investigate the internal reliability of a measure. Both the EFA and CFA: a) are employed to examine the theoretical constructs, or factors, that might be represented by a set of items; b) can assume the factors are uncorrelated; and c) are operated to examine the quality of individual items. However, there is one major distinction between EFA and CFA. The purpose of EFA is to find the one underlying factor model that best fits the data, while the CFA permits a researcher to enforce a predetermined factor model on the data and see how well the model explains responses to the measure.

In this study, the EFA and CFA are central topics of concern in the ASPA-SF's development. Using the two archive data collections from the ASPA's original analysis (Snow et al., 2005) and the replication study (Dempster, 2007; Snow, Martin, Wolff, Stoltz, Helm, & Sullivan, 2008), an EFA will provide a basis for item selection of the ASPA-SF. Likewise, an EFA will also provide the method for the test tryout of the ASPA-SF with a different population of 192 archived responses (Marten, 2005; Yang, 2011). Because the ASPA-SF's findings would be based predominantly on the existing responses of undergraduate and graduate students, the study explored the factor structure of the ASPA-SF on an archive data set of 222 prison participants (Bryant, 2011). The purpose of these exploratory factor analyses provided further understanding of the ASPA-SF as an instrument for theory building. Furthermore, a separate group of 250 participants (Rayner, 2008) provided the opportunity to investigate the significance of ASPA-SF through a CFA and by means of an examination to the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979). The results of these findings determined whether the

ASPA-SF had the ability to be an instrument for theory testing, thus providing the validity of the measure.

Statement of Significance

The significance of this study was two-fold, as the research provided an abbreviated version of the ASPA and thus, meaning of the ASPA-SF. In the previous exploratory factor analyses (Snow et al., 2005; Snow et al., 2008), the studies included the limitations of generalizability, as the participants consisted primarily of students in undergraduate and graduate studies. Therefore, an additional exploratory factor analysis on an unexamined population (i.e., prison population) was important to evaluate the meaning of the ASPA-SF and to fine-tune the significance of the patterns.

According to Hinkin (1995), scales that are shorter in length reduce the likelihood of bias caused by respondent fatigue and carelessness. Researchers have also indicated that scales with fewer items provide respondents with easier access to answer questions, which leads to increased consistency of responses (Harrison, McLaughlin, & Coalter, 1996; Podsakoff, MacKenzie, Podsakoff, & Lee, 2003). Coupling these findings with the problems of generalizability associated with the length of the ASPA, the purpose of this study was to investigate the factor structure of the ASPA, to develop an alternate, shortened version of the ASPA, and to determine the psychometric properties of an abbreviated edition of the instrument. Utilizing previous data findings of the ASPA, the philosophy of classical test theory, and the statistical methods of factor analysis, the study provided an abbreviated version of the ASPA that will enable the self-report instrument to reveal assessments in a simple, timely, and effective way for attachment styles and patterns of relating research. In doing so, this study has the potential to facilitate more

widespread use of the ASPA and further the research on patterns of relating in counseling literature.

Like the original ASPA, a goal of the short-form revision is that the instrument can be utilized to determine a pattern of relating to both mother and father figures. As no other instrument examines adult patterns of relating in early childhood on a continuum, and specifically employs the construct of Parentified attachment (i.e., the pattern measures the extent to which the child felt responsible for meeting the parent's needs), the ASPA has apparent significance in counseling literature. For a clinician, the implications of this evaluation are important, as the instrument has the potential to help clients understand their patterns of relating to significant others, children, and relationships in general. Hence, distinctive to the ASPA is the opportunity for researchers and clinicians to examine and discuss the role of attachment to both mother and father figures on a continuum and, thus, differences in patterns of relating.

Statement of Limitations

The researcher recognizes the following limitations of the study, which restrict the implications of the research. First, the validity of self-report measures of attachment styles has been questioned. Although researchers have argued that self-report measures can access unconscious motivators to attachment patterns (Rholes & Simpson, 2004; Snow et al., 2005), the philosophy has been debated, as attachment has been construed as a rote (rather than a conscious) process. Second, the study is limited by sampling bias. In particular, the intended study will be constricted to archive data with the participants all being from the southeastern United States. The generalizability of these findings, therefore, is limited to a specific geography and time span (i.e., 2004–2011) from the existing population. Third, more research within attachment and counseling literature is needed to determine the influence of caregivers who are

not viewed as primary in childhood. While attachment theory considers the primary caregiver to have the major influence on an individual's development of a sense of self and self and others, more research is needed to determine the influence of other caregivers in this development.

Overview

In Chapter Two, an extensive review of the literature is provided with special attention to the history of attachment theory, important considerations in measurements of attachment, an appraisal of the most prevalent instruments in the history of measuring attachment, an evaluation of the development of a measurement, and a description of the ASPA with an examination of the previous research findings of the instrument. Following this section, a thorough review of the methodology is offered in Chapter Three, with emphasis placed on the theoretical framework and statistical procedures. Chapter Four presents the results of the study with the inclusion of tables and figures. Lastly, Chapter Five provides a discussion of the findings with recommendations for future research and limitations associated with the study.

CHAPTER TWO

REVIEW OF THE LITERATURE

The purpose of this study was to provide a critical item analysis of the Adult Scale of Parental Attachment (ASPA; Snow et al., 2005) for the development of a short form assessment. In order to better understand the ASPA, the following literature will be reviewed. First, the history of attachment theory is reviewed with a description on attachment styles and patterns of relating in infancy, childhood, and adulthood. Second, literature regarding important considerations in measurements of attachment is discussed. Third, a review is provided of the most prevalent instruments in the history of measuring attachment. Fourth, an evaluation of the development of a measurement is provided, with special attention to test configuration, test construction, test tryout, and test revision. Finally, a description of the ASPA with a review of previous research findings of the instrument is presented.

History of Attachment Theory

The conceptual framework of attachment theory originated from the psychoanalyst John Bowlby (1973, 1980, 1969/1982) during the 1950s. Through studying goslings and their biological predisposition to attach themselves to the first moving object they see after hatching known as imprinting, Bowlby extended this concept to his work with maladjusted children and their parents. Bowlby noted that the severe behavior problems of many of the children he treated derived from familial circumstances that consisted of abandonment and loss. Recognizing the flaws in conventional psychoanalytic explanations for behavior problems in children, Bowlby shifted his focus to other fields of study in search of theoretical explanations to apply to humans

and, in particular, to the children with whom he worked (Bretherton, 1992). Consequently, Bowlby's (1973, 1980, 1969/1982) attachment theory was established on principles from ethology, evolution, information processing, developmental psychology, and psychoanalytic theory. The following subsections will review the: a) hypotheses and principles of attachment theory, b) internal working models, c) attachment styles and patterns of relating in infants and children, d) parental attachment styles and patterns of relating in childhood, and e) parental attachment styles and patterns of relating in adulthood.

Hypotheses and principles of attachment theory. Bowlby's (1973; 1980; 1969/1982) attachment theory hypothesized that infants are hardwired to develop attachment bonds to their mother during critical periods in early infancy. According to Bowlby (1969/1982), the significance of the quality of that bond affected the child's future psychological health. Bowlby also described the relation of that bond to the child's behavior with and apart from the child's mother. Attachment theory also speculated the development of a cognitive map in the child's mental milieu that functioned as a pattern for future relationships, and assisted as a mechanism for the intergenerational broadcast of attachment. According to Bowlby (1988),

> Attachment theory is a way of conceptualizing the propensity of human beings to make strong affectional bonds to particular others and of explaining the many forms of emotional distress and personality disturbance, including anxiety, anger, depression, and emotional detachment, to which unwilling separation and loss give rise (p.5).

In addition, this propensity permits the infant and primary caregiver's relationship to continue constant under such harms. Brisch (2002) stated, "Bowlby viewed the mother and infant as participants in a self-regulating and mutually interacting system" (p. 14). This type of mutual interacting system facilitates the transmission of attachment, which imparts a "goal-corrected" behavioral system, a meaning of "felt security", and a genesis of the self. Reflecting on Bowlby's perception of attachment theory as an ethological approach, Collins and Read (1990) wrote,

"According to this view, infant attachment behaviors are controlled by a distinct, goal-corrected behavioral system, which has a 'set goal' of maintaining proximity to a nurturing adult and a biological function of promoting the child's security and survival" (p. 644).

An infant, by means of this "goal-corrected" attachment system, is offered the opportunity to regulate his or her systems and manage his or her needs. Some researchers have referenced this attachment system as operating continuously to supply children with a sense of "felt security", which assists the child in exploration. Furthermore, these researchers perceived this sense of "felt security" as offering a basis for the development of a secure attachment between infant and primary caregiver, and in turn develops the sense of the autonomous self for the infant (Ainsworth et al., 1978; as cited in Bartholomew and Horowitz, 1991).

Bowlby (1969/1982) theorized that the attachment bond is generated out of a complementary exchange between the child's experiences of familiarity and novelty combined with the child's understanding of maternal sensitivity and availability. Serving as a secure base, the mother offers protection and comfort from which the child can explore and to what end the child can return as needed. Bowlby proposed that due to this interchange by the mother and child, the child forms mental models based on his or her psychological and physical experiences. As a result, the child's mental models are formed over time and contain relational information of how the world works with regard to the reasoning between safety and danger, familiarity and novelty, and self and others. Bowlby described this mental reasoning process as an internal working model.

Internal working models. The internal working models (IWMs) serve as an essential concept in attachment theory; the representational model creates the foundation of the supposition. The IWM, attachment theorists have proposed, form patterns of relating to parental

caregivers during infancy for children (Bowlby, 1977; Main, Kaplan, & Cassidy, 1985; Kobak & Sceery, 1988). These IWMs operate as a central supposition in attachment theory as the representational model develops from the child's early experiences with his or her attachment figures. Solomon and George (1999) proposed that these models reveal the child's appraisal of, and confidence in the self as acceptable and worthy of care and protection, and the attachment figure's desire, ability, and availability to provide protection and care.

In turn, these models organize appraisal processes, thought, memory, and feelings with regard to the attachment figure and serve to guide future behavior (Solomon & George, 1999). Thus, the IWM are the internalized perceptions and expectations about the self, others, interpersonal relationships, and the world. West, Sheldon, and Reiffer (1987) suggested that the IWMs formed in infancy serve as a guide for future relationships. Several researchers have hypothesized that these representational models of early attachments with caregivers have the propensity to be constant throughout the lifespan (Bowlby, 1977; Kotler & Omodei, 1986; Takahashi, 1990; Anderson & Stevens, 1993), although Ainsworth (1989) speculated that IWMs could be reconditioned throughout a person's lifetime through other attachment figures in the individual's life.

Attachment styles and patterns of relating in infants and children. While Bowlby (1969/1982) conceived the philosophy of attachment theory, Ainsworth (1973) added validity and depth to the supposition by empirically verifying three types of attachment bonds. Ainsworth's descriptions of the three bonds, referred to as attachment styles, are derived from her observations of the relational interplay between a mother and her child under distressing conditions. This relational interplay, according to Ainsworth, indicated the quality of maternal caretaking when her child experiences an unfamiliar circumstance—a distressing condition. Akin

to Bowlby, Ainsworth considered the behavioral development of the child as dependent on the mother's sensitivity and response to her child's emotional and physical needs.

Based on her clinical observations, Ainsworth and her colleagues (1978) indicated the four attachment styles of secure, anxious/ambivalent, anxious/avoidant, and the later added disorganized or disoriented category of attachment. These styles, consistent with Bowlby's theory, are closely associated with the attachment figure's responsiveness to the infant (Collins & Read, 1990). A secure attachment style is characterized as a bond where the maternal availability to the needs of the child is sensitively and appropriately administered in reaction to the child's need for familiarity and aberration (Ainsworth et al., 1978). Thus, children with a secure attachment are equipped to explore their environment, while also being able to seek and get help and comfort from their mother when distressed.

These children were identified as securely attachment if they had a tendency to cry out or object when the parent left the room, and upon the parents' return the children were apt to greet them favorably. Lanier (1997) hypothesized that securely attached children were likely to use the caregiver as a base from which to explore their surroundings and intermittently return to the parental figure for reassurance. Furthermore, these children were characterized as compliant and reasonably free from anger. Secure attachment, therefore, is manifested when children are assured of their caregiver's accessibility. With the assurance of parents' accessibility, children may display exploration in their environment, form self-worth, and develop sufficient social skills.

Conversely, insecure attachment exists when children view the parent as inconsistent, indifferent, and rejecting. According to Bowlby (1969, 1982), an insecure attachment style increases the likelihood of maladjusted behaviors in children. In particular, when the mother

does not properly attend to and express sensitivity to the child's experiences, the child may develop into the three behaviors of anxious, avoidant, or ambivalent. Anxious responses, the first type of behavior, may include excessive clinging and crying from the child. Avoidant responses, the second type of behavior, may result in the child appearing disinterested. Lastly, ambivalent responses look as if children want closeness yet express anger when it is presented. Consequently, these insecure attachment styles are frequently challenging for the mother to manage, demanding for the child to experience, and produce a less satisfying relationship for both of the mother and child. Main, Kaplan, and Cassidy (1985) stated:

> Individual differences in attachment styles can be viewed as differences in the mental representation of the self in relation to attachment [and] the secure versus various types of insecure attachment organizations can best be understood as terms referring to particular types of internal working models of relationships, models that direct not only feelings and behavior but also cognition, memory, and cognition (p.67).

In terms of ambivalent and avoidant attachment styles, Ainsworth et al. (1978) described the bonds as a loss of equilibrium between the familiar versus novel needs of children, and the mother's sensitivity and availability in reaction to those desires. Main and Soloman (1990) also proposed the pattern of disorganized or disoriented. According to the researchers, a disorganized or disoriented attachment style may develop when children experience physically abusive or neglectful parenting. The pattern of these children may demonstrate a disorganized form of both insecure styles (i.e., anxious ambivalent and anxious avoidant), but most frequently exhibited is the anxious avoidant style.

Parental attachment and patterns of relating in childhood. Research findings have indicated that secure parental attachments in childhood contribute to healthy social adaptation and emotional well-being (Sroufe, 1985). Sroufe (1983) characterized children with a secure attachment style as resilient, cooperative, socially adept, and resourceful. On the other hand, research findings have indicated that if children receive parenting that is characterized by

inconsistency, rejection, and unresponsiveness, children are likely to develop an insecure attachment style (Ainsworth et al., 1978; Belsky & Rovine, 1987). Children with an insecure attachment style will likely not develop a confidence in self and others, which may discourage their exploration and development in the social world and cause them to be distrustful. These children tend to exhibit more aggression, negative affect in cognitive problem-solving situations, and also lack social skills (Egeland & Sroufe, 1981; George Kaplan, & Main, 1979; Sroufe, 1983). Some attachment theorists also have hypothesized that an insecure attachment style leads to episodes of anxiety, depression, and loneliness (Andersson & Stevens, 1993; Hazan & Shaver, 1990; Nelson, 1994). Previous research findings have denoted insecure attachment styles may predict later impairments in a child's developmental growth as well (Erikson, Sroufe, & Egeland, 1985; Main & Weston, 1981).

Parental attachment styles and patterns of relating in adulthood. Bowlby (1969/1982) theorized that future behavior and psychological well-being are formed by IWMs. The IWMS include the patterned perceptions about an individual's sense of self in relation to anticipated outcomes between the self, others, and environment. Bowlby posited that IWMs were most influenced by the early mother–child attachment processes and have a propensity to remain stable throughout life. Therefore, as an individual progresses through later developmental stages, the person's patterned perceptions—though generally unconscious—are a "mental map" of how future significant relationship processes work. Bowlby (1988) believed IWMs in childhood are generalized to later relationships outside the family and continue to be essential throughout the lifespan by affecting a person's ability to form secure relationships with others. Through evaluating a clinical population of adolescents and adults, Bowlby (1977, 1985) suggested three types of insecure attachment styles: anxious, compulsive self-reliance, and compulsive care-

giving. In particular, Bowlby found that individuals with anxious attachments were likely to be in a continuous state of anxiety over the availability of their attachment figures. Bowlby referenced that people with a compulsive self-reliance pattern often avoid others and are reluctant to seek out assistance or affection from others due to feelings of mistrust. Lastly, Bowlby noted that individuals with a compulsive care-giving attachment style regularly place others' needs before their own and believe they are not worthy of love from significant attachment figures.

Hazen and Shaver (1987) discovered an association between infant attachment histories and adult romantic relationships that implicated the stability of an individual's early attachment style into adulthood. In their large-scale study, Hazen and Shaver examined the relation between the affectional bonds formed in infancy and the affectional bonds shaped later in adult romantic relationships. Participants were invited to take a short "love quiz" with questions pertaining to their early childhood experiences, parental relationships, current social relationships, and current romantic relationship. Assuming the attachment style represents the content of IWMs, the researchers created questions based on Ainsworth's three attachment styles (Ainsworth et al., 1978; Bowlby, 1969/1982) that tapped the participants' early childhood attachment relationships and current adult romantic relationship. Hazen and Shaver's results showed that the participants' perceptions (i.e., considered as IWMs) of their early childhood attachment history and their current romantic relationships varied as theoretically expected. For instance, individuals who described a secure adult attachment were inclined to state more warmth in their early relationships with their parents. Similarly, Hazen and Shaver noted that people referencing insecure attachment with their partner had a propensity to describe more cold and rejecting attachment histories. These findings offered a supporting theoretical link between parent-child

attachment qualities and the attachment characteristics of an adult romantic relationship with the mechanism of transfer being the IWM proposed by Bowlby (1969/1982). While Hazen and Shaver's (1987) study had limitations consisting of brief forced-choice questions, a trait-like approach to measurement, and response bias due to a possible halo effect when romantically involved, the investigation produced considerable interest within other researchers to replicate and extend their findings (Collins & Stroufe, 1999; Crowell, Treboux, & Waters, 2002; Feeney & Noller, 1990; Hazen & Shaver, 1994; K. N. Levy, Shaver, & Blatt, 1998; M. B. Levy & Davis, 1988; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000).

In a review of literature, Grossman, Grossman, and Zimmerman (1999) wrote about the stability of attachment styles from within the first two years of life to age 16. For this age span, the researchers found "convincing and sometimes strong developmental stability of attachment" (p. 780). Conclusions verifying the concept of IWMs were contrived based on the observed behavior, narratives, and self reports that essentially mirrored the theorized attachment styles and behaviors. Likewise, Rothbard and Shaver's (1994) literature review supported the stability of attachment across the life span, which corroborated Grossman et al.'s findings. Grossman et al. found some studies which proposed that challenging life events and severe family stressors encroach on the stability of attachment characteristics through perhaps shifting the consistency of childcare and the condition of the caregiver–child attachment relationship. Nevertheless, attachment characteristics were found to be relatively stable when these factors were controlled statistically.

Assessments of Attachment

Over the last 25 years, the study of attachment has developed into many complex understandings. To meet the needs of these complex understandings, a plethora of attachment

measures have been created with the majority being unpublished. Although there are many methods to evaluating and determining attachment styles, all measures distinguish patterns of secure attachment and subtypes of insecure attachment. According to Maunder and Hunter (2009), different methods of measuring attachment style accentuate different attachment phenomena.

Ravitz et al. (2010) stated that individuals should consider six important factors when evaluating measures of attachment. First, researchers need to consider whether to utilize a self-report evaluation or a coding of observed data. Second, investigators should contemplate whether they would utilize categorical or dimensional measurement. Third, Ravitz et al. indicated that examiners ought to reflect on the nature of attachment in terms of state versus trait. Fourth, researchers should consider that, although developmental attachment experiences do produce stable conscious attitudes and preferences in adulthood, some interpretations of adult attachment style are exclusive for the circumstances of a specific type of relationship or particular dyad. Fifth, examiners should recognize how differently named attachment categories or dimensions may overlap and differ. Lastly, Ravitz et al. cited the importance of researchers being aware that none of the measures of adult attachment in current use was developed for psychosomatic research, which may affect the relevance to psychosomatic research.

When reviewing the assessments of attachment, an evaluation can be provided through a discussion of the strange situation, interview and projective methods, and self-report instruments. In particular, interview and self-report measures can be considered separately as the instrumentation is generally viewed as distinct assessment methods. For instance, the participant, without direct participation of the clinician, completes self-report measures, while interviews

occur with the researcher presenting questions orally and then interpreting and scoring the responses (Kazdin & Petti, 1982).

Strange Situation. The Strange Situation (Ainsworth et al., 1978) was the first method to measure patterns of infant and parent attachment. The most widely used assessment, the Strange Situation, assesses the quality of child-parent attachments. In particular, this approach evaluates the degree that an infant utilizes the caregiver as a *secure* base wherefrom to engage the environment. The procedure involves the process where a child is observed playing for 20 minutes while caregivers and strangers enter and leave the room. The intent of this method is to recreate the flow of the familiar and unfamiliar presence in most children's lives. From the observations of the strange situation with children who were approximately one to two years old, Ainsworth and her colleagues identified four styles of responses: secure, anxious/ambivalent, and anxious/avoidant.

In particular, the archetypal secure infant is troubled by separation from the caregiver and indicates this concern directly upon the caregiver's return. The secure child instantly calms with contact with his or her caregiver. The ambivalent or resistant infant, likewise, shows distress on separation, but communicates for and opposes contact upon the caregiver's return. Ainsworth and her colleagues found the avoidant child may or may not exhibit behavioral signs of distress upon separation from the caregiver. Although physiological indicators suggest high reactivity (Gunner et al., 1996; Donovan & Leavitt, 1985), the disorganized infant tends to ignore the caregiver on re-union and shows little outward indication of distress. The recognition and coding of these patterns by Ainsworth and her colleagues influenced the development of many measurement instruments for infants, children, and, more recently, adults.

Interview and Projective Measures. Interview and projective measures have had a long history in the research of attachment. The following interview and projective measures will be evaluated in further detail: Adult Attachment Interview, Current Relationship Interview, and Adult Attachment Projective.

Adult Attachment Interview. The Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984/1985/1996) was the first instrument developed to measure adult attachment. Through discussing childhood experiences, the AAI evaluates an adult's mental representations of attachment. At present, the AAI is the predominant method used to assess mental representation of attachment in adults. The following sections will evaluate the interview protocol and coding system, validity, stabilities, and other research findings, alternative scoring methods, and strengths and weaknesses of the AAI.

Interview protocol and coding system. The interview protocol of the AAI typically takes one hour to administer and currently consists of 20 questions. The entirety of the dialogue is transcribed verbatim, including all pauses, dysfluences, and restarts. While this is true, cues to intonation, prosody, and nonverbal are omitted. After the interview, descriptions of an individual's childhood experiences with each parent are then coded (George et al., 1996). The AAI's coding system centers on predictive signs in the interview description such as narrative coherence in secure adults and idealization of caregiver in avoidant and dismissing adults. The AAI bases these experiences on two scales: parental behavior and state of mind. The specific parental behavior scales employed are: loving, rejecting, neglecting, involving, or pressuring, while the state of mind scales utilized are: idealization, insistence on lack of recall, active anger, derogation of parent or of attachment, fear of loss, meta-cognitive monitoring, and passivity of speech. In particular, these state of mind scales are associated to the coherence of discourse.

Likewise, the overall coherence of the transcript is also coded. Individuals are categorized as secure/autonomous, dismissing, preoccupied, or cannot classify. In addition, people may be classified as "unresolved," where applicable. This is particularly the case in terms of loss, trauma, or abuse. A two week specialized training is involved in learning the AAI, which includes knowledge of the interview protocol, scoring, and coding (Ravitz et al., 2010).

Validity, stabilities, and other research findings. The AAI has exhibited stability and discriminant and predictive validity in both clinical and non-clinical populations (Hesse, 2008; Bakermans-Kranenburg & van Ijzendoom, 1993; Roisman, Holland, Fortuna, Fraley, Clauseel, & Clarke, 2007; van Ijzendoom & Bakermans-Kranenburg, 2008). Distinguishing from interviewer effects, the AAI's test-retest stabilities over 1 to 15 month periods demonstrated 77-90% within the categories of secure/autonomous, dismissing, and preoccupied (Bakermans-Kranenburg & van Ijzendoom, 1993; Benoit & Parker, 1994; Sagi, van Ijzendoom, Scharf, Koren-Karie, Joels, & Mayseless, 1994). Research findings of the AAI have demonstrated significant associations between insecure attachment and anxiety disorders, borderline personality, and violence (Bakermans-Kranenburg & van Ijzendoom, 1993; van Ijzendoom & Bakermans-Kranenburg, 2008; Manassis, Bradley, Goldberg, Hood, & Swinson, 1994; Fonagy, Leigh, Steele, Kennedy, & Mattoon, 1996; Patrick, Hobson, Castle, Howard, & Maughan, 1994; Holtzworth-Munroe, Stuart, & Hutchinson, 1997). The AAI has also shown that individuals with histories of borderline personality, abuse, or suicidality often have unresolved/disorganized and unclassifiable transcripts (van Ijzendoom & Bakermans-Kranenburg, 2008; Ravitz et al., 2010).

Alternative scoring methods. Additional methods of scoring the AAI have also been developed. The Adult Attachment Interview Q-Sort method (Kobak, 1993) is a substitute scoring system that codes based on affect regulation strategies. In the Q-Sort method, elements of the

interview are systematically sorted into categories along a single continuum. The dimensions of the continuum involve security/insecurity and affect regulation strategies of deactivation/hyperactivation. The Q-Sort method has shown an interrater reliability of .65 and resulted in the same classification of the original AAI in 80% of cases (Kobak, 1993; Ravitz et al., 2010). Utilizing the Q-Sort method, Fyffe and Waters (1997) distinguished security from insecurity with 89% accuracy and dismissing from preoccupied with 96% accuracy when compared to the original AAI scoring. Research findings have also shown that scores of *reflective functioning* (i.e., a person's capacity to understand one's own and others' mental states, intentions, and motives) to correlate with *coherence of mind* scores (Fonagy, Steele, Steele, & Target, 1998; Fonagy, Steele, Steele, Moran, & Higgitt, 1991). Furthermore, the Q-Sort method has demonstrated to be a robust predictor of the interviewee's infant security (Fonagy, Steele, & Steele, 1991). An alternate two-category coding system has also shown associations between secure attachments in mothers and maternal sensitivity to their infants (Grossmann, Fremmer-Bombik, Rudolph, & Grossmann, 1998; Ravitz et al., 2010).

Strengths and weaknesses. According to George and West (2011), the strengths of the AAI are the instrument centers on the assessment of the representational model and assumes developmental continuity of the attachment system. George and West also refer to the AAI as being methodologically precise in the evaluation of coherency and as a result has reputable interrater reliability. Bakermans-Kranenburg and van IJzendoorn, (2009) also cited AAI's strength lies in its validation, as the instrument rests on more than 25 years of developmental and clinical research.

Despite the strengths of the AAI, George and West (2011) argued the instrument has substantial drawbacks. In particular, the researchers stated that from a practical standpoint, the

interview protocol is too time consuming, cumbersome, and costly. Referencing the 1 to 2 hours to administer, the verbatim transcription, lengthy coding and classification process, George and West suggested that the result was not sensible. Likewise, George and West referenced from a clinical standpoint, the AAI's ability to assess attachment trauma is restricted. The researchers noted the only validated assessments are for loss through death and physical abuse. In addition, George and West referenced the administration instructions for the AAI require interviewers, justly, not to seek information that interviewees do not desire to converse. In doing so, the researchers found some trauma experiences are edited out of the AAI transcript, by the interviewer failing to dissertate specific experiences or to abbreviate the dialogue. In closing, the George and West stated by specifying state of mind using AAI fails to offer essential knowledge about attachment defensive processes.

Current Relationship Interview. The Current Relationship Interview (CRI; Crowell & Owen, 1996) was created to measure the specific representation of adult attachment relationships that arises in the sequence of relationship experiences with a particular adult partner. The following section will evaluate the interview protocol and coding system and the validity, stability, and other research findings of the CRI.

Interview protocol and coding system. The CRI is a semi-structured, approximately hour-long protocol that assesses adult attachment in couple relationships. The CRI system involves interviewees describing their relationship with their current partner, revisiting salient separation episodes, exploring instances of perceived rejection, recalling experiences with caregiving and careseeking in their romantic relationship, and recounting how the achievement of their own and their partner's goals have been aided or undermined though their involvement with one another. In general, the CRI is not viewed as a measure of security in adult romantic relationships, which

is unlike other narrative measures of adult attachment. The CRI, on the other hand, is a means by which to assess whether individuals are able to freely and flexibly evaluate their current romantic relationship (Treboux, Crowell, & Waters, 2004). As the CRI measures coherence of discourse, the instrument is only by inference pertinent to the assessment of security. Complete testing of the prototype hypothesis thus requires diverse assessments, including behavioral measures focused on the use of a romantic partner as a secure base (Roisman, Collins, Sroufe, & Egeland, 2005).

The scoring system of the CRI is based on three ratings. The first rating is established on the interviewees' description of behavior and thinking about attachment-related issues. This rating includes the constructs of valuing intimacy and independence. The second rating evaluates the interviewees' perceptions of their partner's behavior. Lastly, the third rating assesses the interviewees' discourse style. The discourse rating consists of the constructs of anger, derogation, idealization, passivity of speech, fear of loss, and overall coherence (Ravitz, et al., 2010). As a result, the CRI determines a secure attachment through coherent reports of being able to utilize a partner as a secure base and of providing a secure base, or the consistently expressed desire to do so.

Conversely, interviewees are classified as insecure are incoherent in their discourse about the current relationship. This is true as these individuals may place prominence on material goals, leisure activities, or closeness at the expense of individual development in regards to the value of the relationship. Similarly, these individuals may also minimize discord or the need for support or the value of shared experience and growth. When this is determined, interviewees are divided into those who avoid or dismiss the significance of the relationship and those who appear preoccupied and intent on controlling it.

Validity, stability, and other research findings. Discriminant and convergent validity of the CRI have been demonstrated (Crowell, Treboux, & Waters, 2002; Crowell, Treboux, & Waters, 2003; Owens, Crowell, Pan, Treboux, O'Connor, & Waters, 1995). The CRI has established good temporal stability over 18 months (Crowell, Treboux, & Waters, 2002). Studies have also shown the CRI to be unrelated to intelligence, education, gender, duration of relationship, or self-reported depression (Crowell, Treboux, Gao, Fyffe, Pan, & Waters, 2002; Treboux, Crowell, & Waters, 2004). The CRI has displayed a fluctuation in terms of allocating the classifications with developmental stage. In particular, results of the CRI showed that 46% of young engaged adults were classified as secure compared to 71% of married individuals with children (Crowell, Fraley, & Shaver, 2008). The CRI has also predicted self-reports of relationship quality, violence, divorce, and satisfaction (Treboux, Crowell, & Waters, 2004).

The Adult Attachment Projective. The Adult Attachment Projective (AAP; George & West, 2001) is an assessment that evaluates the responses to a standard set of seven drawn picture stimuli to activate an individual's attachment system. The scenes depict children or adults alone (i.e., alone pictures) or in attachment caregiving dyads (i.e., dyadic pictures). The stimuli symbolize key attachment events, consisting of illness, solitude, separation, loss, and abuse. Interviewees are required to construct a story for each picture wherein they explain what is going on in the picture, what contributed to the scene, what the characters are thinking or feeling, and what might transpire afterwards.

Interview protocol and coding system. The AAP is a semi-structured interview, which takes approximately 30 minutes to administer in a private setting. The administration instructions incorporate traditional principles of free response tasks with semi-structured interview techniques. The interviewee is presented the picture to hold and invited to illustrate what is going

on in the picture, including the background of events, characters' thoughts or feelings, and the outcome. The responses are recorded for transcription and verbatim analysis. Interviewers are required to be trained in administration technique, however they do not need to be attachment experts or trained in the AAP coding and classification scheme. Training consists of 2-week seminar, in which a classification of 25 interviews to 80% reliability is a requisite. The AAP generally takes about 1 hour to code and classify by a trained reliable interviewer (George & West, 2011).

The AAP has four attachment classification groups, which parallels to the Adult Attachment Interview classification groups of secure/autonomous, dismissing, preoccupied, and unresolved. Each AAP transcript is coded on seven scales categorized under the three groups of discourse, content, and defensive processing. Discourse, the first group, codes evaluate personal experience, which specifies whether or not the individual's narrative include accounts about his or her own life experiences. In particular, the AAP classifies personal experience as loss of distance from the stimulus. The second group, content, codes comprise agency of self and connectedness for alone images, and synchrony for dyadic pictures. The agency of self describes the individual's description of the self as able of falling back on internalized attachment resources or accessible attachment persons to help cope with distress.

Furthermore, the agency of self depicts the individual's representation of the self as capable to exercise constructive problem-solving action. The content of connectedness assesses how the individual feels united to others in meaningful attachment, friendship, or partnered relationships. Synchrony evaluates the level to which the characters in the story are represented in a reciprocal and mutually engaging relationship (Lis, Mazzeschi, Di Riso, & Salcuni, 2011; George & West, 2011). Lastly, the group of defensive exclusion entails the psychological

occurrence where most of the information accessing an individual is excluded from additional processing to avoid the overstraining of his or her capabilities and awareness (Bowlby, 1980). Defensive exclusion information can be stowed away for relatively long phases or even permanently. There are three forms of defensive exclusion, i.e., segregated systems, deactivating defensive processes, and cognitive disconnection. Each of these forms of defensive exclusion represents different levels of "protection" from dangerous distressful events.

Segregated systems portray a mental state wherein painful attachment-related memories are secluded and obstructed from conscious thought and embedded in experiences of trauma or loss through death (Bowlby, 1980). Deactivating defensive processes are characterized as efforts to dismiss, calm down, or shift attention away from attachment events, individuals, or feelings in reaction to the image stimuli (Lis, Mazzeschi, Di Riso, & Salcuni, 2011). The intention of deactivation is to create a representational "distance" concerning the individual and the attachment-activating event. Deactivation acts as a measure to neutralize the attachment distress and is coded for story themes that highlight the importance of rules, achievement, authority, or distance. Cognitive disconnection processes literally disconnect the components of attachment from their source, therefore weakening constancy and the potential of maintaining in one's mind a unitary view of events, emotions, and individuals associated with them.

The concept known as fragmentation inhibits the individual from noticing and thus reacting affectively to the stimulus distress. Cognitive disconnection is coded for story themes that accentuate the magnitude of uncertainty, withdrawal, and misrepresentation. Utilizing these seven dimensions, one of four attachment classifications is designated. Individuals classified as secure are described by a personification of a self that is able of depending on internalized attachment resources or available attachment figures to help cope with distress. Security also

encompasses the individual's feelings of being connected to others in meaningful attachment, friendship, or partnered relationships and the capability to portray himself or herself in a reciprocal and mutually engaging relationship. In particular, secure individuals exhibit little use of defensive processes (Lis, Mazzeschi, Di Riso, & Salcuni, 2011; George & West, 2011).

Validity, reliability, and other research findings. Construct validity of the AAP has been validated through the utilization of the AAI. The overall agreement between the two instruments resulted at 92% ($\kappa = .89$, $p < .0001$) and interjudge reliability for the four-group classification (secure, dismissing, preoccupied, unresolved) was $\kappa = .82$ ($p < .0001$), and test–retest reliability was $\kappa = .79$ ($p < .0001$; George & West, 2001, 2011). Studies have utilized the AAP with brain functional MRI and found evidence that potential neural mechanisms of attachment trauma in patients with borderline disorder (Buchheim, Erk, George, Kachele, Ruchsow, & Spitzer, 2006; Buchheim, Erk, George, Kachele, Kircher, Martius, Pokorny, Ruchsow, Spitzer, & Walter, 2008). Female participants with borderline personality disorder displayed greater anterior midcingulate cortex activation to pictures of characters facing attachment threats alone when compared to a control group. In addition, the female participants with borderline diagnoses showed a greater right superior temporal sulcus activation along with lessened right parahippocampal gyrus activation in reaction to pictures of dyadic interactions in an attachment context (Buchheim et al., 2006; Buchheim et al., 2008; Ravitz et al., 2010).

Self-Report Measures of Attachment. A self-report inventory is a type of psychological test often used in personality assessment. In attachment research, this type of test presents a number of questions or statements that may or may not describe certain qualities or characteristics of the individual, their family members, or their close relationships. Over the last twenty-five years, a great amount of research has demonstrated the utility of these self-report

measures in testing and confirming fundamental predictions about attachment theory. When comparing to interview measures, Rholes and Simpson (2004) stated there are "substantial differences between the AAI and self-report attachment measures in target relationships, method and analytic focus" (p.18). For this reason, there are distinctions between instruments that merit careful consideration before an assessment method is chosen.

Although the validity of self-report measures of attachment styles have been questioned due to the implicit unconscious aspect of attachment-system functioning, Rholes and Simpson (2004) argued that self-report instruments can accurately measure attachment styles and also access the unconscious. In general, self-report measures can be divided into either categorical or forced-choice measures (e.g., Hazan & Shaver, 1987; Bartholomew & Horowitz, 1991) or dimensional measures (e.g., Brennan, Clark, & Shaver, 1998; Feeney, Noller, & Hanrahan, 1994; for a review, see Mikulincer & Shaver, 2007). The following self-report measures will be evaluated in this section: Adult Attachment Styles, Adult Attachment Scale, Adult Attachment Questionnaire, Relationship Questionnaire, Relationship Styles Questionnaire, Attachment Style Questionnaire, Experiences in Close Relationships, Reciprocal Attachment Questionnaire for Adults, and Parental Bonding Instrument.

Adult Attachment Styles. Hazen and Shaver (1987) developed the first questionnaire, the Adult Attachment Style, to measure attachment in adults. Hazan and Shaver conceptualized romantic love as an attachment process in which a person's romantic partner comes to serve his or her primary attachment needs. Based on this conceptualization, Hazan and Shaver (1987) developed their self-report measure comprising of three brief paragraphs that categorize adult descriptions to the secure, avoidant, and anxious-ambivalent infant attachment styles first identified by Ainsworth, Blehar, Waters, and Wall (1978). Due to the instruments brevity, ease

of administration, and face validity, the Adult Attachment Style gained wide usage and led to the development of other self-report measures (Mikulincer & Shaver, 2007).

In the Adult Attachment Styles questionnaire, participants are asked to indicate which one of the three attachment styles best characterizes their general orientation toward romantic relationships. The central hypothesis motivating Hazen and Shaver's (1987) instrument is that, in adolescent and adult romantic relationships, each individual interacts in a characteristic interpersonal style that has evolved out of the attachment style formed during his or her infancy. In support of this premise, Hazan and Shaver found that securely attached individuals find it relatively easier to get close to others, are comfortable relying on others and have others rely on them, and do not worry about being abandoned or about someone becoming too emotionally close to them. The researchers also found that avoidantly attached individuals reported that they were uncomfortable being close to others, found it difficult to completely trust and depend on others, and are concerned when anyone gets too close. In addition, Hazan and Shaver noted that anxious-ambivalent individuals referenced that they find others are reluctant to get as close as they would like, often worry that their romantic partners do not care for them, and often want to become extremely close to their partners.

Hazen and Shaver (1987, 1990) found that proportions of categories produced by their measure in two independent samples (Sample 1: 56% secure; 25% avoidant; and 19% anxious-ambivalent; Sample 2: 56% secure; 23% avoidant; and 20% anxious-ambivalent) closely resembled the proportions of corresponding styles accounted in infant studies performed in the United States (secure, 62%; avoidant, 23%; and anxious-ambivalent, 15%; see Campos, Barren, Lamb, Goldsmith, and Stenberg, 1983). Furthermore, a large national comorbidity survey by Mickelson, Kessler, and Shaver (1997) also showed prevalence rates of: 59% secure, 25.2%

avoidant, 11.3% anxious, 4.5% unclassifiable. These findings indicated a higher prevalence of insecure attachment is typically found in clinical populations.

Additional support for the construct validity of the Hazan and Shaver measure has been proposed by the findings of several studies. Hazan and Shaver (1987) referenced that individuals supporting different attachment styles varied in theoretically predicted ways concerning: a) descriptions of their romantic relationships, b) beliefs about self and social relationships, and c) recollections of the quality of parent-child relationships. Likewise, Feeney and Noller (1990) replicated these findings. Pistole's (1989) findings indicated that individuals with different attachment styles differed predictably in: a) the extent of satisfaction that they experienced in their romantic relationships, and b) the conflict resolution strategies employed in their relationships. Simpson (1990) correspondingly found that participants with insecure attachment styles were more likely to experience dependence, suspicion, indecisiveness, and discontent in their relationships, whereas securely attached persons were more likely to be connected in relationships described by higher levels of interdependence, trust, commitment, and satisfaction. In a study of work satisfaction and attachment styles, Hazan and Shaver (1990) found that securely attached persons are likely to approach their work with confidence, are relatively unburdened with fears of failure, and do not allow work to interfere with their intimate relationships. In contrast, anxious-ambivalent individuals tended to allow love concerns and fear of rejection to interfere with work performance, and avoidant persons were more likely to use work to avoid social relationships.

Adult Attachment Scale and Revised Adult Attachment Scale. The Adult Attachment Scale (AAS; Collins & Read, 1990) and the Revised Adult Attachment Scale (RAAS; Collins, 1996) are self-report questionnaires for measuring attachment in adults based on Hazan and

Shaver's (1987) attachment descriptors. The revised scale is reported to have advantages over the original, such as improved reliability. The ASS and the RAAS have been reported as highly correlated (r = .98) when assessed on an undergraduate sample (Collins, 1996). The AAS and RAAS are comprised of three subscales measuring close—comfort with emotional closeness, depend—feelings about the dependability of others, and anxiety—apprehension about being abandoned or unloved. The AAS and the RAAS are composed of an 18-item self-report scale, on which participants rate statements about how they function and feel in a relationship with a partner, someone close, and people in general.

Questions are answered on a five-point Likert scale, with 1 = not at all characteristic, to 5 = very characteristic of me. The three subscales can be employed in two different ways. The dimensions can be employed independently of each other to assess individuals in terms of their level of each. Alternatively, the subscales of closeness and dependency can be combined resulting in a two-dimensional construct, which results in the four attachment styles of secure, anxious-ambivalent, avoidant and fearful (Collins & Read, 1990; Stein et al., 1998; Collins & Feeney, 2004). The result of the two dimensional construct is closeness/dependency (α = .73) and anxiety (α = .73) with the classification being dependent on the profile of scores along the dimensions (O'Connor & Elklit, 2008; Armour, Elklit, & Shevlin, 2011). According to Collins (1996), no single dimension corresponds to a single style but the three dimensions can be utilized in combination to define discrete styles of attachment. Therefore, an individual with a secure attachment style generally scores high on the close-dependency dimension and low on the anxious dimension, while an individual with an avoidant attachment style typically scores low on the close-dependency dimension (Ravitz et al., 2010).

Research findings have indicated the first two subscales of close-dependency correlate with an avoidance dimension (r = .86 and r = .79, correspondingly) and that the latter subscale of anxious correlates with an anxiety dimension of other self-report attachment scales (r = .74; Brennan, Clark, & Shaver, 1998). The test-retest reliability of the AAS was 70% over 4 years (Kirkpatrick & Hazan, 1994). Furthermore, internal consistency reliability, α coefficient, and retest reliability after a 2-month interval were >.58 for the three subscales. The measures of self-esteem, social behavior, instrumentality, expressiveness, openness, and satisfaction in romantic relationships also correlated in projected propensities with the AAS and RAAS subscale scores (Collins & Read, 1990; Collins, 1996). Similarly, a scoring of an insecure attachment style based on the AAS has also been correlated to personality factors, depressive and anxiety symptoms, negative affectivity, and proneness to distress (Mikulincer & Shaver, 2007).

In terms of the reliability of the RAAS, based on Cronbach's alpha, scores have been reported as: undergraduate students demonstrated .77 for closeness, .78 for dependency, and .85 for anxiety (Collins, 1996), individuals with an anxiety disorder showed .84 for closeness, .76 for dependency, and .90 for anxiety (Eng, Heimberg, Hart, Schneier, & Liebowitz, 2001), and individuals with posttraumatic stress disorder exhibited .67 for closeness, .69 for dependency, .83 for anxiety, and .76 for closeness/dependency (Armour, Elklit, & Shevlin, 2011). While Collins and Read (1990) employed a cluster analysis on a sample of undergraduate students to establish the presence of four attachment styles, succeeding research utilizing cluster analysis on the RAAS indicated that participants with a social anxiety disorder failed to identify the four styles. Instead, the participants were characterized by two attachment styles. The researchers described the two attachment styles as secure and anxious-preoccupied, which were influenced by Collins and Read's (1990) descriptions of the four styles (Eng et al., 2001).

The Adult Attachment Questionnaire. The Adult Attachment Questionnaire (AAQ; Simpson, 1990; Simpson, Rholes, & Phillips, 1996) is a 17-item measure that asks individuals to indicate how they relate to romantic partners in general. The instrument's basis of closeness and attachment in the AAQ is derived from sentences contained in Hazen and Shaver's (1987) attachment vignettes (like the AAS and RAAS). The AAQ's classification of attachment styles is based upon Ainsworth, Blehar, Waters, and Wall's (1978) secure, ambivalent, and avoidant. The AAQ contains the following 17-items: (a) "I find it relatively easy to get close to others"; (b) "I'm not very comfortable having to depend on other people"; (c) "I'm comfortable having others depend on me"; (d) "I rarely worry about being abandoned by others"; (e) "I don't like people getting too close to me"; (f) "I'm somewhat uncomfortable being too close to others"; (g) "I find it difficult to trust others completely"; (h) "I'm nervous whenever anyone gets too close to me"; (i) "Others often want me to be more intimate than I feel comfortable being"; (j) Others often are reluctant to get as close as I would like"; (k) "I often worry that my partner(s) don't really love me"; (l) "I rarely worry about my partner(s) leaving me"; (m) "I often want to merge completely with others, and this desire sometimes scares them away"; (o) "I'm confident others would never hurt me by suddenly ending our relationship"; (p) "I usually want more closeness and intimacy than others do"; (q) "The thought of being left by others rarely enters my mind"; and (r) "I'm confident that my partner(s) love me just as much as I love them." Each item of the AAQ is answered on a 7-point Likert-type scale with 1 = strongly disagree to 7 = strongly agree (Simpson, Rholes, & Phillips, 1996).

Similar to other self-report measures based on Hazan and Shaver's scale (e.g., AAS and RAAS; see Griffin & Bartholomew, 1994a, 1994b, for reviews), two dimensions have been found present within the AAQ. The first dimension indicates high versus low levels of

avoidance—the inclination to avoid or withdraw from closeness and intimacy in relationships. The second dimension measures high versus low levels of ambivalence—the propensity to have conflicted and countervailing thoughts and feelings about whether others can be counted on in relationships. According to this two-dimensional model, prototypical secure attachment is reflected in low scores on both dimensions. Specifically, secure attachment can be categorized from the absence of problems associated with highly avoidant and highly ambivalent orientations (Simpson, Rholes, & Phillips, 1996).

When evaluating the reliability of the AAQ based on Cronbach's alpha, the instrument has produced continuous measures of the three attachment styles of secure (.51), avoidant (.79), and anxious (.59; Ravitz et al., 2010). In addition, Simpson, Rholes, and Phillips (1996) suggested through factor analyses that items correspond to two dimensions, with one being a secure/avoidant dimension and the other being an anxious/non-anxious dimension. According to these researchers, the indexes of secure and anxious were less reliable and comparisons of effect sizes between the three attachment indexes should be done cautiously. Other research findings have indicated significant associations between attachment, support giving, and support seeking in women with romantic partners through using the AAI and AAQ (Simpson, Rholes, Orina, & Grich, 2002). Furthermore, studies have also shown that attachment dimensions on the AAQ and depression were significantly associated in nonclinical samples (Hankin, Kassel, & Abela, 2005; Rholes, Simpson, & Friedman, 2006).

Relationship Questionnaire. The Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) is a self-report attachment measure that evaluates individuals' typical feelings in close relationships. The RQ asks participants to read four brief paragraphs, each describing a prototypical attachment style, and to assign how well each paragraph describes them. After

reading the brief paragraphs, individuals rate the degree to which they are similar to each style on a 7-point scale with ranges from 1, very unlike me, to 7, very like me (Bartholomew & Horowitz, 1991).

The RQ is an adaptation of Hazan and Shaver's (1987) attachment descriptors (i.e., similar to the AAS, RAAS, and AAQ), which utilizes Bowlby's (1973, 1980) concept that attachment patterns incorporate models of self and others. On Bowlby's foundation of the prediction that attachment representations are evident in the adult's thoughts and feelings, RQ classifications describe feelings about the self and others in close adult relationships. The RQ crosses a positive or negative self-view with a positive or negative other-view to create four categories of attachment: secure, dismissing, preoccupied, and fearful. According to Cooley (2010), a positive view of self is evident in secure and dismissing types, while a negative view of self in preoccupied and fearful types. Cooley also stated that in the RQ a positive view of others is apparent in secure and preoccupied styles, whereas a negative view of others is established in dismissing and fearful types.

In terms of characteristics of the RQ's attachment classifications, individuals with a secure attachment are comfortable in close relationships, have an internalized sense of self-worth, can adaptively cope with loss and separations without deactivating affect to deny losses or become preoccupied with the loss to the exclusion of other activities, are able to form bonds, and appropriately mourn when those bounds are broken (Stein, 2011). Although the secure classification is similar to Hazan and Shaver's, the dismissing classification characterizes comfort without close relationships and the importance of feeling independent and self-sufficient. The preoccupied classification represents individuals who anxiously attempt to gain attention and affection from others. Individuals with preoccupied attachments have tremendous difficulty

coping with loss and separation. Fearful attachments describe participants who feel simultaneously dependent on others acceptance of him or her, but also think that others will eventually let them down. Individuals with fearful attachments long for closeness, but tend to avoid intimacy due to feared rejection and loss. Furthermore, forming relationships and coping with loss and separations are difficult for fearful attachment styles. In general, individuals with dismissing attachments avoid intimacy and closeness, while maintaining their sense of self-efficacy by denying the value of close relationships (Bartholomew & Shaver, 1998). Dismissing attachment styles also have struggles forming relationships and are likely to perceive independence and autonomy as more valuable than relationships. Individuals with a dismissing style are apt to cope with losses and separations by denying the importance of attachments and turning their attention elsewhere (Stein, 2011).

As predicted by their model, Bartholomew and Horowitz (1991) discovered that secure and preoccupied groups were distinguished from fearful and dismissing participants in sociability. In addition, Bartholomew and Horowitz found that self-concept measures separated secure and dismissing styles from preoccupied and fearful styles. Both of these findings helped provide support of the validity of the RQ. Furthermore, these distinctions in orientations to self and others were evident across interviews, self-reports, and peer reports. The Cronbach's alpha values for different scales ranged from low for security (.32) to high for fearful (.79; Backstrom & Holmes, 2001; Fortuna & Roisman, 2008). In addition, the RQ scale has a moderate, though acceptable, test–retest reliability (Griffin & Bartholomew, 1994a). In terms of stability of the RQ, Scharfe and Bartholomew (1994) reported that attachment style across 8 months was 63% for women and 56% for men while Davila, Burge, and Hammen (1997) reported moderate stability over time for self-reported measures of attachment styles.

Researching stability and fluctuation with covariation between attachment security, coping, and well-being, Researching 370 individuals over a 6-year period, Zhang and Labouvie (2004) found that fluctation in security negatively covaried with defensive coping and depressive symptoms and positively covaried with integrative coping and self-precieved well-being. In addition, Zhang and Labouvie indicated that over time older participants became more secure, more dismissing, and less preoccupied. Griffin and Bartholomew (1994a) found there was a strong negative correlation between "model of self" and neuroticism, and positive correlation between "model of others" and extraversion. Lastly, the RQ has been utilized to show significant associations between adult attachment and depression and anxiety symptoms, negative affectivity, and health care provider relationships (Ciechanowski & Katon, 2006; Mikulincer & Shaver, 2007; Ciechanowski et al., 2006; as cited in Ravitz et al., 2010).

Relationship Styles Questionnaire. The Relationship Scales Questionnaire (RSQ; Griffin & Bartholomew, 1994) is an indirect measure of Bartholomew and Horowitz's (1991) four attachment prototypes. The RSQ comprises of 30 phrases drawn from the paragraph descriptions of Hazan and Shaver´s (1987) Adult Attachment Questionnaire (AAQ), Bartholomew and Horowitz´s (1991) Relationship Questionnaire (RQ), and Collins and Read´s (1990) Adult Attachment Scale (AAS). After reading the phrases, individuals rate how well each item fit their characteristic style in close relationships through a 5-point Likert type scale. Items on the RSQ generate four attachment patterns and two attachment dimensions. While the intention of the RQ is to classify into groups, the RSQ uses the same conceptual framework to measure dimensions related to positive or negative models of self and others. The four attachment patterns consist of secure, avoidance, ambivalence, closeness, anxiety, and dependency.

All of the RSQ scales ranged on Cronbach's alpha from .69 to .82, except for the secure

scale, which was .50 (Ravitz et al., 2010). The avoidance and anxiety dimensions were indicated as the best-fitting models in a confirmatory factor analysis (.86 and .84, respectively; Roisman et al., 2007). In terms of measurement of attachment classifications, a study indicated low reliabilities in the patterns of secure (.32) and preoccupied (.46). Furthermore, the study found that the reliability of the "model of others" was acceptable (-.68), but the "model of self" was low (.50; Backstrom & Holmes, 2001).

In Griffin and Bartholomew's (1994a) research, findings revealed the patterns of fearful (.79) and dismissing (.64) to have higher Cronbach's alpha values. Griffin and Bartholomew's research also found correlations between the RQ and RSQ are high, and both measurements are correlated to NEO Personality Inventory (Costa & McCrae, 1985) personality factors, although not identical. A study evaluating the RSQ, primary health care utilization, and costs has indicated that individuals with preoccupied and fearful attachment reported significantly greater physical symptoms compared with secure individuals. In addition, those participants with a preoccupied attachment had the highest care costs and utilization, while those with a fearful attachment had the lowest care costs and utilization (Ciechanowski, Walker, Katon, & Russo, 2002).

The Attachment Style Questionnaire. The Attachment Style Questionnaire (ASQ; Feeney, Noller, & Hanrahan, 1994) consists of 40 items and five dimensions. The ASQ is considered to be a broadly utilized adult attachment measure in both normative and clinical contexts (Fossati et al., 2003). The ASQ involves individuals ranking items based on a 6-point scale and identifies the five dimensions of: discomfort with closeness, need for approval, preoccupation with relations, viewing relationships as secondary (to achievement), and lack of confidence (to self and others). Unlike many dimensional attachment measures (e.g., AAQ, AAS and RSQ), the ASQ was not derived from Hazan and Shaver's (1987) original category

descriptions of attachment styles to generate items. According to Mikulincer and Shaver (2007), the ASQ was created "from the ground up" (p. 87) to make sure that all critical ideas adopted in Bowlby's and Ainsworth's writings were included. According to Karantzas, Feeney, and Wilkinson (2010), the ASQ endeavored to resolve the inherent limitations in categorical measures that were present in other dimensional attachment measures (e.g., AAQ, Simpson, 1990; ECR, Brennan et al., 1998). Therefore, when the ASQ was developed, the instrument addressed three key measurement limitations of adult attachment at the time. First, the ASQ developed a more precise measure of attachment style that extended beyond category-based measures. Second, the ASQ assessed attachment in adolescents and adults with little romantic experience, which those individuals were previously largely excluded from attachment studies despite the importance of their attachment concerns. Third, the ASQ clarified the number of dimensions, i.e., facets, necessary to capture attachment styles (Karantzas, Feeney, & Wilkinson, 2010).

Dimensions of the ASQ. Evaluating the dimensions of the ASQ, Karantzas, Feeney, and Wilkinson (2010) cited the dimension of discomfort with closeness as a key aspect of other attachment avoidance measures (Brennan et al., 1998; Collins & Read, 1990; Simpson, 1990). The researchers referenced the dimension of relationships as secondary to achievement, which was consistent with both Bartholomew's (1990) dismissing attachment (i.e., independence and achievement as a buffer against vulnerability and hurt) and Mikulincer and Shaver's (2003, 2007) attachment avoidance. Karantzas, Feeney, and Wilkinson also stated the dimension of need for approval encompassed Bartholomew's fearful style, concentrating on validation from others and fears of rejection and abandonment. The researchers claimed the dimension of preoccupation included both Bartholomew's preoccupied attachment and Hazan and Shaver's

(1987) anxious attachment, entailing clinging and the constant reliance on caregivers to fulfill attachment needs. Lastly, Karantzas, Feeney, and Wilkinson referenced the dimension of confidence encapsulated secure attachment and reiterated with many categorical and dimensional measures that comprise security as either a distinct group or dimensional pole of attachment perpetuity.

Karantzas, Feeney, and Wilkinson (2010) also indicated categorical measures propose that attachment styles are mutually exclusive, within-group variability is inconsequential, and attachment styles are negatively related. Furthermore, the researchers referenced previous studies that showed how attachment styles are weakly correlated (Carver, 1997; Feeney et al., 1994; Fossati et al., 2003) and that some individuals were high on both attachment anxiety and avoidance (fearful-avoidance, see Bartholomew & Horowitz, 1991; Mikulincer & Shaver, 2003; Simpson & Rholes, 2002). Based on these results, Karantzas, Feeney, and Wilkinson (2010) recommended that multiple forms of attachment insecurity can occur. Other studies have indcated that two orthogonal dimensions underpinned attachment styles, with no evidence for discrete categories (Fraley & Waller, 1998), and attachment dimensions pertain both to Ainsworth's Strange Situation measure and to the Adult Attachment Interview (Fraley & Spieker, 2003; as cited in Ravitz et al., 2010).

Validity, stability, and other findings of the ASQ. The α coefficients for the ASQ scales have ranged from .76 to .84 in a large sample of undergraduates. In addition, stability coefficients have been reported from .67 to .78 across a 10-week period (Feeney et al., 1994). The ASQ has been utilized in adolescents and adults; studies have included evaluating associations with appraisals of social support and coping with stressful events (Alexander, Feeney, Hohaus, & Noller, 2001), relationship satisfaction (Feeney, 1994), depression and

anxiety in nonclinical samples (Mikulincer & Shaver, 2007) and to examine how attachment predicts pain and depression in patients with chronic pain (Meredith, Strong, Feeney, 2006; Meredith, Strong, Feeney, 2007). Brennan, Clark, and Shaver (1998) correlated discomfort with closeness (r=.90) and viewing relationships as secondary to avoidance (r=.61) in a large factor-analytic study. In addition, the researchers found preoccupation with relationships and a need for approval and confirmation by others were related to anxious attachment, while the lack of confidence scale loaded mostly on avoidance (.70).

The Experiences in Close Relationships and Revised Experiences in Close Relationships. The Experiences in Close Relationships (ECR; Brennan, Clark, & Shaver, 1998) is 36-item instrument that measures romantic attachment through a 7-point Likert scale, ranging from "Disagree Strongly" to "Agree Strongly". The ECR was derived from a principal components analysis of 1085 undergraduate's responses to 323 attachment items from 60 self-report measures of attachment, many which were unpublished. Brennan, Clark and Shaver (1998) explained that the four clusters found in the original EFA revealed four distinct groups, representing patterns similar to the model of attachment described by Bartholomew and Horowitz (1991). The two scales were found to be nearly uncorrelated (r = .11), suggesting that the measure captures two separate, underlying dimensions of adult attachment. The researchers then selected the items that correlated highly as the two overall dimensions of attachment. Avoidance, the first dimension, consisted of 18 items in the instrument (e.g., " I prefer not to show a partner how I feel deep down").

The second dimension encompassed the construct of attachment anxiety and involved other 18 items in the measure (e.g., " I worry about being abandoned"). Original alpha scores for both the avoidance (a = .94) and anxiety (a = .91) subscales indicated high reliability of the

measure. Furthermore, Brennan, Clark and Shaver found the ECR produced stronger, more specific measurement precision compared to the Relationship Questionnaire (Bartholomew and Horowitz 1991) and Collins' and Read's (1990) Adult Attachment Scale (Fraley et al. 2000). The researchers also suggested that the ECR presents two continuous subscale scores on each attachment dimension, representing the difference in anxiety and avoidance scores among individuals in each attachment category (i.e., secure, fearful, preoccupied, dismissing). In addition, Brennan, Clark, and Shaver stated that the subscale scores more accurately discriminated participants through different degrees of attachment insecurity, particularly the distinction of fearful and dismissing styles. The researches suggested that the ECR is more conservative than Bartholomew and Horowitz's (1991) RQ self-report instrument in classifying an individual as secure, which has led to statistically stronger results.

The Revised Experiences in Close Relationships (ECR-R) was created to improve the psychometric properties of the ECR (Fraley, Waller, & Brennan, 2000). Although there are considerable similarities in items between the ECR and the ECR-R, the ECR-R is regarded to have stronger psychometric properties compared to the ECR. The ECR-R was composed after a re-analysis of the complete pool of 323 items collected by the original researchers (Brennan et al., 1998). Using a combination of classical psychometric techniques, such as factor analysis and item response theory analysis (IRT), the researchers revised the scales to assess the low ends of the anxiety and avoidance dimensions with the same degree of precision and discriminative power as the middle to high ends. According to the authors, the revised scales contain a substantially higher degree of information than the original ECR, without increasing the number of scale items. Similar to the original ECR, the ECR-R contains 18 items that were chosen with the highest discrimination values for each scale.

In samples of adolescents and adults, the ECR-R has shown stability of a two-factor structure representing attachment-related anxiety and avoidance (Brenning, Soenens, Braet, & Bosmans, 2011). Both subscales in the ECR-R have shown high internal consistency (Sibley & Liu, 2004; Sibley et al., 2005). The Relationship Questionnaire has been utilized in a study to help provide construct validity of the ECR-R (Dewitte, De Houwer, & Buysse, 2008). Furthermore, the predictive validity of the ECR-R has been supported through assessments of both depressive symptoms and strategies of emotion regulation (Wei, Vogel, Ku, & Zakalik, 2005). In terms of α coefficients, Mikulincer and Shaver (2007) reported the ECR and ECR-R to be near or above .90, and test-retest coefficients were reported to be between .50 and .75, with little correlation between the two scales of anxiety and avoidance in most samples. Parker, Johnson, and Ketring (2011) also indicated the reliability of the anxiety and avoidance subscales in the ECR through both male and female responses. According to their study, Cronbach's alpha scores for men's responses were .91 on the anxiety subscale and .90 on the avoidance subscale and women's responses were .90 on both the anxiety and avoidance subscales.

Modified versions of the ECR-R have also been developed. The ECR-RC (Brenning, Soenens, Braet, & Bosmans, 2011) is an alternate questionnaire designed to work with middle childhood and early adolescence. In the ECR-RC, children and adolescents rate the 36-items on a 7-point scale twice, once for their mother and once for their father. The ECR-RS (Fraley, Heffernan, Vicary, & Brumbaugh, 2011), or Relationships Structure questionnaire, is a modified version created to assess attachment in multiple contexts. The ECR-RS contains nine items that assess attachment in each of the four domains of mother, father, romantic partners, and friends, producing 36 items total. While the ECR-RS questionnaire is a means to assess parental, romantic, and platonic friendships, ECR-RS is not intended to be limited to these domains. The

researchers also conceptualize that the ECR-RS items could be used in the other domains of sibling relationships, relationships to God, relationships to pets, or relationships to teachers or counselors.

The Reciprocal Attachment Questionnaire. The Reciprocal Attachment Questionnaire (RAQ; West, Sheldon, & Reiffer, 1987; West & Sheldon-Keller, 1992) was created to examine adult attachment style through five-dimensional subscales. The three-dimensional subscales of feared loss of the attachment figure, separation protest, and proximity-seeking associate to the criteria of attachment and serve to distinguish adult attachment from other social relationships. The two-dimensional subscales of use of the attachment figure and perceived availability of the attachment figure relate to the unique provisions offered by attachment, i.e., the role of attachment for the individual. The attachment dimensions are measured on the RAQ by five scales of three items each, with scores ranging from 3 to 15. Individuals rate each item on a 5-point Likert-type scale; higher scores for each scale signify greater insecurity with respect to the attachment dimension being evaluated. For example, for the perceived availability scale, higher scores denote that the participant observes his or her attachment figure as unavailable and unresponsive when needed. In addition, for the use of the attachment figure scale, higher scores designate less use of the attachment figure.

The validity and reliability of the RAQ have been established with both clinical and nonclinical populations (West, Sheldon, & Reiffer, 1987; West & Sheldon-Keller, 1992). The coefficient alphas have ranged from 74 to .85, thereby signifying an acceptable structural coherence of the scales (West & Sheldon-Kellor, 1992). The test-retest reliability, over a 4-month period, with a community sample varied from .76 to .82 for the scales, thus demonstrating their temporal stability (West & Sheldon-Kellor, 1994). Furthermore, factor analysis confirmed

the theoretical distinction between the criteria and provisions of adult attachment. Lastly, a discriminant functions analysis indicated that the scales were highly relevant for the differentiation of psychiatric outpatients from nonpatients (West, Sheldon, & Reiffer, 1987; West & Sheldon-Kellor, 1992). While the RAQ was not formed to map onto dimensions of anxiety or avoidance, the instrument has been established to be exchangeable to these terms. In particular, West and Sheldon-Keller (1994) created a separate questionnaire, the Avoidant Attachment Questionnaire, for adults who claim not to have a primary attachment figure. The Avoidant Attachment Questionnaire consists of four subscales, which evaluates how respondents: preserve detachment in relationships, prioritize self-sufficiency, perceive relationships as a risk to security or a symptom of weakness, and yearn for closer affectional bonds.

The Parental Bonding Instrument. The Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979) is one of the most widely used instruments to measure parent–child bonding. The PBI focuses on the "parental contribution to the parent-child bond" (Garbarino, 1998, p.32). The PBI asks adult individuals to recollect their parents' behaviors and attitudes from their childhood. Through factor analysis, the PBI measures the two parental styles of overprotection and care, thereby dividing child-rearing styles into the following four categories: "high care-low control", "high care-high control", "low care-low control" and "low care-high control". In terms of assessing the parenting styles, the PBI considers high care and low overprotection as most optimal and low care and high overprotection (i.e., " affectionless control") as least optimal. The two scales are inversely correlated as the parental care scale assesses the extent that a parent was empathic and caring or cold and indifferent, while the parental overprotection scale appraises the degree that a parent was intrusive and infantilizing or, in contrast, promoted independence in the individual.

In general, the PBI has demonstrated good psychometric properties, either in terms of reliability (Kendler, 1996; Kendler, Sham, & MacLean, 1997; Wilhelm, & Parker, 1990; Wilhelm, Niven, Parker, & Hadzi-Pavlovic, 2005) or in terms of validity of both perceived and actual parental characteristics (Arrindell, Hanewald, & Kolk, 1989; Narita et al., 2000; Parker, 1990; Wilcox et al., 2008). Furthermore, discriminant validity concerning clinical and nonclinical populations has been recognized with greater affectionless control in clinical individuals (Manassis et al., 1999). When utilized with the AAI, the convergent validity of the PBI denoted that attachment information acquired from both instruments were comparable in participants with optimal (secure) attachment histories, while not in individuals presenting idealization or anger towards their mothers. The utilization of the PBI has been suggested in "clinical samples where suboptimal (unresolved) attachment histories are likely" (Manassis et al., 1999). The PBI has been translated into a variety of languages, including Spanish, Japanese, French, Italian, Chinese, and Urdu.

A modified version of the PBI, the Measure of Parenting Style (MOPS; Parker, Roussos, Hadzi-Pavlovic, Mitchell, Wilhelm, & Austin, 1997), was developed for three purposes. First, the modified version overcame one of the PBI limitations in having some "double negative" items, which caused some confusion. Therefore, all the items in the MOPS are constructed in a direct way. Second, although preserving the "care" and "control" scales, the scales are considerably reduced in terms of the numbers of items. Third, there is an "abuse" scale in the modified version. Thus, the MOPS is described after the PBI measure.

Development of a Measurement

According to Cohen and Swerdlik (1998/2002), the formation of a good test entails the developer to adhere to recognized stages of developing a measurement. Cohen and Swerdlik

stated the five stages are: 1) test conceptualization, 2) test construction, 3) test tryout, 4) item analysis, and 5) test revision (p. 188).

Test Conceptualization. Test conceptualization is the first stage in the development of any measurement scale. In this stage, researchers interested in a specific area of psychological functioning or construct determines that a test would be helpful or is needed in order to fully study the particular aspects of the area of interest. According to Sternberg and Grigorenko (1997), part of this stage is identifying the construct based on a synthesis of a series of impressions. Kline (2005) referenced the responsibility of the test developer to convince the test user that the construct being measured is a reasonable assimilation and synthesis of ideas. Making this difficult, there are arguments in the social sciences at times about what a specific construct means as individuals may differ in definitions.

Furthermore, Cohen and Swerdlik (1998/2002) cited that a review of literature would reveal whether the construct has been previously evaluated, if a test to measure the construct has already been developed and, if tests exist, how sound their psychometric properties are. Cohen and Swerdlik stated that typically at this point, researchers would find that the construct has been evaluated and a new test is not required. If researchers do not like the available tests or a test does not exist, however, a determination that a new test may be warranted. Cohen and Swerdlik referenced 14 prelimary questions that test developers must consider: 1) What is the test designed to measure?; 2) What is the objective of the test?; 3) Is there a need for the test?; 4) Who will use the test; 5) Who will take the test?; 6) What content will the test cover?; 7) How will the test be administered?; 8) What is the ideal format of the test?; 9) Should more than one form of the test be developed?; 10) What special training will be required for administering or interpreting the test?; 11) What types of responses will be required by test takers?; 12) Who

benefits as the result of an administration of this test?; 13) Is there any potential harm as the result of an administration of the test?; and 14) How will meaning be attributed to scores on the test?

Test Construction. Test construction, the second stage, occurs when researchers determine that the construct of interest has not been adequately measured or evaluated. This stage starts with scaling—the process of setting rules for assigning numbers in measurement. In scaling, researchers must determine what scale values will be assigned to different amounts of the characteristic, attribute, or trait being measured. Thurston (1959) is credited for being at the forefront for the efforts to create methodologically sound scaling methods during his work to adapt psychological scaling methods to the study of psychological variables. Examples of these psychological variables are attitudes and values (Bock & Jones, 1968).

Different types of scales can function as various characteristics. For instance, scales can be categorized: along a continuum of level of measurements, the performance on a test as a function of age (i.e., age scale), or performance as a function of grade (i.e., grade scale), one-dimensional versus multi-dimensional, or comparative versus categorical. Whatever the type of scale, test developers must create a measurement method in an approach they believe is best suited to the manner they have envisioned the construct and how paradigm should be measured.

A test taker is presumed to have more or less a particular characteristic as a function of their test scores. Specifically, the higher or lower the score the more or less the trait the respondent possesses. There are various methods for deciding the numbers allocated to distinct answers. Nonetheless, researchers in general utilize rating scales to examine behavior in the field of attachment styles. In 1932, Rensis Likert developed one of the most commonly used rating scales (Allen, 1957). In his study, Likert (1932) accounted very satisfactory reliability data and

that findings from his scales compared favorably with those obtained by the Thurston scale. In particular, the Likert-type scale involves a series of declarative statements of which individuals are asked whether they agree or disagree with each statement and how strongly. After the scale of test has been decided, researchers must next create the test item pool. Commonly, test item pool can be produced by: a) exercising a survey to clinicians, b) a review of literature on particular behavioral functions and their behavioral correlates or associated behaviors, and c) relevant association guidelines (i.e., American Counseling Association). This form of item generation will typically cede about twice as many items that will emerge in the final version of the scale, but all are essential in order to produce a test that is both reliable and valid (Croker & Algina, 1996).

Test tryout. Once researchers have generated the initial item pool, the items must be tested. The testing should be performed on respondents analogous in important respects to the individuals for whom the test is being created. A critical concern in test tryout is how many respondents should be utilized in the initial tryout. While there are no particular rules, some researchers have suggested there be no smaller than five respondents per test item while others have recommended that ten individuals per item is more desirable (Cohen & Swerdlik, 1998). According to Floyd and Widaman (1995), the more respondents engaged in the tryout the better as the number reduces the role of chance in succeeding statistical and factor analyses.

While test tryout on respondents as analogous as possible to the target individuals, the test should be evaluated in conditions as similar as possible for those in which the test was designed. For example, if a test is created for individuals who live in an inpatient facility, this is where the test should be tried out. Croker and Algina (1986) referenced that trying out the test under similar conditions permits: a) researchers to better investigate items, b) administers and

respondents' reactions in the testing session, c) how well the test instructions correspond the situation, and d) how well the items are written to the specific conditions under which the test is to be employed.

Item analysis. The fourth stage in test development is item analysis. Item analysis is an essential stage, as the goal of test construction is to create an assessment of minimum length that produces scores with the necessary reliability and validity for the test's projected use. While there are various statistical methods that can be utilized to perform an item analysis, several of these practices are not relevant to the development of an attachment rating scale. The primary method employed to create patterns of relating rating scales is the factor analysis. A factor analysis is used to explain a category of mathematical procedures intended to classify particular variables (or factors) that are commonly characteristics, attributes, or dimensions on which individuals may differ.

According to Cohen and Swerdlik (1998), a factor analysis is conducted on an exploratory or confimatory basis and can be employed to acquire both convergent and discriminatory evidence of construct validity. Floyd and Widaman (1995) referenced an EFA consists of: estimating or extracting factors, determining how many factors to retain, and rotating factors to an interpretable orientation. On the other hand, the authors cited in a CFA a factor structure is theorized and tested for the structure's fit with the observed covariance structure of the measured variables.

Test revision. In general, item analysis can generate sizable amounts of data about the test items and the proposed test itself. Consequently, as the primary method of item analysis for the development of patterns of relating rating scales is the factor analysis, much of the data that can be produced will not be. In the person of patterns of relating or attachment scales, test

revision typically entails deciding if the items chosen for inclusion appropriately identify the construct of interest. Other problems concerning the chosen items are their: a) readability—ease of reading and understanding for the test administrator, b) appropriate factor loadings, specificity of instructions for administrators, raters, and for interpretation, and c) overall test utility. At this point, researchers may desire to re-evaluate their item pool and substitute items that may be more representative or rewrite items that may be difficult to understand. After revision, researchers must return to step three and tryout the proposed test again. After tryout, another item analysis is performed and data analyzed.

Once the test has been revised and tried out for the second time (or more), researchers may determine that the test is in measurement's final form. In this phase, researchers can create the test norms from the data and the measurement will be stated to have been standardized on the second sample (Cohen & Swerdlik, 1998). According to Robertson (1990), standardization is the process operated to introduce objectivity and uniformity into test administration, scoring, and interpretation. In other words, the standardization sample indicates the performance of the group of individuals against whom the respondents will be compared. In addition, the standardized sample group is descriptive of the population on those variables that may affect test performance. After the test items have been finalized and the test has been standardized, the assessment is ready for the final step of cross-validation, which occurs on a different sample of test takers.

Development of the Adult Scale of Parental Attachment

Building upon Cohen and Swerdlik's (2002) principles of test construction, this section will evaluate the a) test conceptualization, b) test construction, c) test tryout, d) item analysis, and e) test revision of the Adult Scale of Parental Attachment (ASPA; Snow et al., 2005).

Test Conceptualization of the ASPA. In reviewing literature, Snow et al. (2005) found that many of the self-report instruments focused on romantic relationships to evaluate adult attachment style. The researchers also discovered that few researchers have focused on how memory of parent-child interactions relates to the internal working models and the representational model of an adult. In particular, the authors noticed that a review of attachment instruments indicated a need for a self-report instrument that examined adult attachment by recalling childhood experiences of parental interaction. Furthermore, the researchers determined that self-report instruments rarely consider the role of the father figure in attachment behavior.

To address the need for a self-report instrument that examined patterns of relating and attachment styles to mother and father figures, the authors developed the Adult Scale of Parental Attachment utilizing the general constructs of West and Sheldon-Keller (1994). Thus, the test conceptualization of the ASPA included the purpose of obtaining information concerning the adult's perception of patterns of relating to mother and father figures before the age of 14. The authors perceived that such an instrument would be useful in determining an individual's patterns of relating to others, and particularly in relationship to parenting.

Test construction of the ASPA. After reading the general constructs of West and Sheldon-Keller (1994), Snow obtained permission to base the items in the ASPA on the interview questions developed by West and Sheldon-Keller for assessing patterns of attachment. The construction of the ASPA then included the addition with Snow's creation of an 84-items with Likert-type response choices. The Likert-type response choices included: 1) never, 2) seldom, 3) sometimes, 4) frequently, and 5) constantly. Out of the 84-items, the ASPA was constructed to measure the adult attachment relationship to both mother and father by focusing on the individual's internal working models of his or her attachment to mother and father. Thus,

the ASPA was comprised as an 84-item measurement with 42 questions pertaining to individuals' childhood relationship to specifically their mother and their father. The authors stated the test construction of the ASPA sought to determine the specific patterns of relating and how those patterns formed a profile to assess adult attachment styles. Furthermore, the researchers noted the construction of the ASPA served a beneficial purpose in research as the instrument would be useful in determining a person's patterns of relating to others and particularly in relationship to parenting.

Test tryout of the ASPA. After Snow et al.'s (2005) construction of the ASPA, the test tryout of the instrument was needed before item analysis. In order to accomplish a test tryout of the ASPA, a team of counselor education graduate students rated each individual item for clarity. Based on these ratings, Snow, Martin, and Helm collaborated on editorial changes before administrating the instrument to 587 undergraduate and graduate students.

Item analysis of the ASPA. Snow et al. (2005) utilized the responses from a study of 587 participants were analyzed to establish psychometric properties through an exploratory factor analysis and multidimensional scaling. The 587 participants were undergraduate and graduate students from two universities in the southeastern United States. The sample included 565 usable responses with 436 women and 129 men. The participants' age ranged from 17 to 59 with a mean age of 26.45. In particular, the sample included 436 Caucasians, 106 African-Americans, and 23 "other" racial groups that contributed in the first study. The following sections will evaluate the exploratory factor analysis, multidimensional scaling, psychometric properties, and additional findings of the ASPA.

Exploratory factor analysis of ASPA. To start the study, Snow et al. (2005) factor analyzed items 1-42, which focus on the respondent's relationship with his or her mother figure,

separately from items 43-84, which focus on the relationship with his or her father figure. The researchers' initial set of factor analyses examined a four-factor solution—as to be consistent with the four attachment styles most commonly seen in the literature: Secure, Anxious, Avoidant, and Disorganized. The authors' employed a varimax-normalized rotation with a .40 factor loading value. In this factor solution, the researchers' discovered a factor with items containing Secure attachment along with reverse loading values of items related to Avoidant attachment. To explain the issue of reverse loading values with positive values, the researchers' performed a subsequent factor analysis using a five-factor solution with a varimax-normalized rotation with a .40 factor loading value. According to Snow et al., the five-factor solution for items related to mother attachment resulted in a cumulative eigenvalue score of 21.69 and a cumulative percent variance of 51.65. In particular, the five-factor solution for items related to father resulted in a cumulative eigenvalue score of 23.10 and a cumulative percent of variance of 55.01. The factor loadings, eigenvalues and percent of variance for mother are shown in Table 2.1 and for father in Table 2.2.

Table 2.1

Five Factor Analyses of Items 1-42 (Mother)

	F1-Safe	F2-Dependent	F3-Parentified	F4-Fearful	F5-Distant
1	.672				
2				.445	
3	.571				
4					.511
5				.764	
6				.810	
7				.570	
8				.493	
9	.445				
10	.653				
11					.446
12	.723				
13	.804				

14	.842					
15	-----					
16					.600	
17				.755		
18					.527	
19					.556	
20					.534	
21					.709	
22					.557	
23			.696			
24			.600			
25			.645			
26	------					
27			.506			
28			.747			
29			.548			
30		.655				
31	-----					
32			.500			
33	.812					
34	.711					
35	-----					
36					.536	
37		.459				
38	-----					
39	-----					
40		.709				
41		.562				
42		.666				
EIG	11.14	5.02	2.50		1.71	1.33
%V	26.51	11.95	5.94		4.07	3.17

Table 2.2

Five Factor Analyses of Items 43-84 (Father)

	F1-Distant	*F2-Fearful*	*F3-Parentified*	*F4-Dependent*	*F5-Safe*
43					.643
44					.445
45					.630
46	.710				
47		.807			
48		.814			
49		.637			

50		.514			
51	----				
52	----				
53	.598				
54					.664
55					.766
56					.802
57	.492				
58	.687				
59		.740			
60	.677				
61	.592				
62	.521				
63	.670				
64	.691				
65			.810		
66			.698		
67			.615		
68	----				
69			.568		
70			.838		
71			.568		
72				.612	
73	.570				
74			.461		
75					.820
76					.584
77	.457				
78	.678				
79				.514	
80	----				
81	.446				
82				.717	
83					.527
84				.609	
EIG	12.15	5.31	2.37	1.84	1.44
% V	28.93	12.64	5.64	4.37	3.42

Snow et al. (2005) indicated that the resulting five factors—for both mother and father—consisted of the following patterns of relating: Safe, Dependent, Parentified, Fearful, and Distant. The authors' defined and described the subscales as followed:

Safe – The authors referenced this subscale measures the extent to which the child felt the relation provided comfort and security. A child with a safe pattern of relating may have experienced confidence in the parent's availability and support.

Dependent – The researchers stated this subscale measures the extent to which the child felt a need for the parent to be available. A child with a dependent pattern of relating may have experienced helplessness and uncertainty when the parent was not available.

Parentified – The authors noted this subscale measures the extent to which the child felt responsible for meeting the parent's needs. A child with a parentified pattern of relating may have experienced feelings of importance and enjoyed being helpful.

Fearful – The investigators cited this subscale measures the extent to which the child experienced a fear of abandonment and a belief that the parent would not be available for support. A child with a fearful pattern of relating may have experienced anger toward the parent or frustration with the parent.

Distant – The authors referenced this subscale measure the extent to which the child experienced disappointment in the parent's support and availability. A child with a distant pattern of relating may have experienced a need to distance from the parent and may have experienced anger toward the parent.

Snow et al. (2005) indicated the items in each of the factors were consistent for mother and father as seen in Table 2.3. Eigenvalues for these factors, however, were completely reversed for mother and father as seen in Table 2.1 and Table 2.2. In particular, the researchers found that the factor with the lowest cumulative eigenvalue for mother emerged as the factor with the highest cumulative eigenvalue for father; the second lowest factor for mother was the second

highest factor for father, etc. Based on the items in each factor, the researchers used the following labels in Table 2.3.

Table 2.3

Item Loadings

Item #	Item Content
Safe	
Factor 1/Mother	Factor 5/Father
1/43	I had my M/F with me when I was upset.
3/45	When I was anxious, I desperately needed to be close to my M/F.
12/54	When I was upset, I was confident my M/F would be there to listen to me.
13/55	I turned to my M/F for many things including comfort and reassurance.
14/56	I talked things over with my M/F
33/75	I usually discussed my problems and concerns with my M/F
34/76	It was easy for me to be affectionate with my M/F
9	I was confident that my M would always love me.
10	I was confident that my M would try to understand my feelings.
44	I felt lost when I was upset and my F was not around.
83	I was never certain about what I should do until I talked to my F.
Dependent	
Factor 2/Mother	Factor 4/Father
30/72	I felt it was best to depend on my M/F
37/79	I often felt too dependent on my M/F
40/82	I needed my M/F to take care of me
42/84	I was helpless without my M/F
41	I was never certain about what I should do until I talked to my M.
Parentified	
Factor 3/Mother	Factor 3/Father
23/65	I put my M/F's needs before my own.
24/66	It was hard for me to get on with my work if my M/F had a problem
25/67	I enjoyed taking care of my M/F
27/69	I made a fuss over my M/F
28/70	I sacrificed my own needs for the benefit of my M/F.
29/71	It made me feel important to be able to do things for my M/F.
32/74	I wanted my M/F to rely on me.
Fearful	
Factor 4/Mother	Factor 2/Father
5/47	I resented my M/F spending time away from me.
6/48	I felt abandoned when my M/F was away for a few days.
7/49	I had a terrible fear that my relationship with my M/F would end.

8/50 I was afraid that I would lose my M/F's love.
17/59 I got frustrated when my M/F left me alone.
2 I felt lost when I was upset and my Mother was not around.

Distant
Factor 5/Mother Factor 1/Father
4/46 I felt relieved when my M/F went away for a few days.
11/53 I worried that my M/F would let me down.
16/58 I wish there was less anger in my relationship with my M/F.
18/60 My M/F seemed to notice me only when I was angry.
19/61 I got furious when I did not get any comfort from my M/F.
20/62 I got angry at my M/F because I thought she/he could have made more time for me.
21/63 I often felt angry with my M/F without knowing why.
22/64 My M/F was always disappointing me.
36/78 I felt there was something wrong with me because I was distant from my M/F.
57 Things had to be really bad for me to ask my Father for help.
73 I wanted to get close to my Father but I kept pulling back.
77 I was so used to doing things on my own that I did not ask my Father.
81 I relied on myself and not my Father to take care of me.

Items Not Loading in Both Mother and Father
26/68 I expected my M/F to take care of her/his problems.
38/80 I wish I could be a child again and be taken care of by my M/F.

Items Not Loading in Mother
15 Things had to be really bad for me to ask my mother for help.
31 I wanted to get close to my mother but I kept pulling back
35 I was so used to doing things on my own that I did not ask my mother.
39 I relied on myself and not my mother to take care of me.

Items Not Loading in Father
51 I was confident that my father would always love me.
52 I was confident that my father would try to understand my feelings.

Multidimensional Scaling of the ASPA. Snow et al. (2005) performed a multidimensional scaling with the intention of clarifying the reverse order of the factors for mother and father, and to distinguish if there were statistically and psychologically meaningful dimensions of patterns of attachment related to mother and father. In particular, the researchers created a correlation matrix of standardized variables. The authors used the recommended procedures by Kruskal and Wish (1987) and Fitzgerald and Hubert (1987) to attempt and inspect various solutions for goodness of fit. The findings indicated a two dimensional solution to be the

most appropriate with Stress=.07. Specifically, the researchers included Table 2.4 to show the ideal points for the relationships on the two dimensions. Snow et al. stated the dimensions were named through evaluating the ideal points of each variable on the dimensions and through establishing the common meaning of the variables within the dimension.

Table 2.4

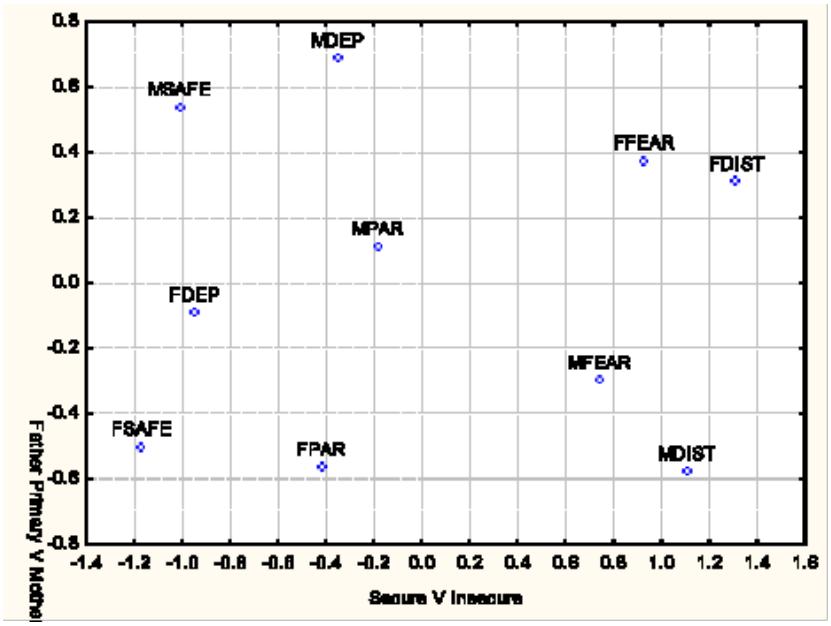
Ideal Points of Similarities and Dissimilarities of Patterns of Attachment

Variable	Secure v Insecure	Father Primary v Mother Primary
Mother Safe	-1.012	0.534
Mother Dependent	-0.352	0.689
Mother Parentified	-0.182	0.113
Mother Fearful	0.742	-0.299
Mother Distant	1.106	-0.545
Father Safe	-1.172	-0.500
Father Dependent	-0949	-0.090
Father Parentified	-0.422	-0.563
Father Fearful	0.929	0.374
Father Distant	1.311	0.313

According to Snow et al. (2005), the graphical representations of Dimension One in Figure 2.1 revealed the clustering of variables that denote the respondents' perceptions of Secure versus Insecure attachment with patterns Safe, Dependent and Parentified clustering on one end of the continuum and Fearful and Distant clustering on the other end of the continuum.

Figure 2.1

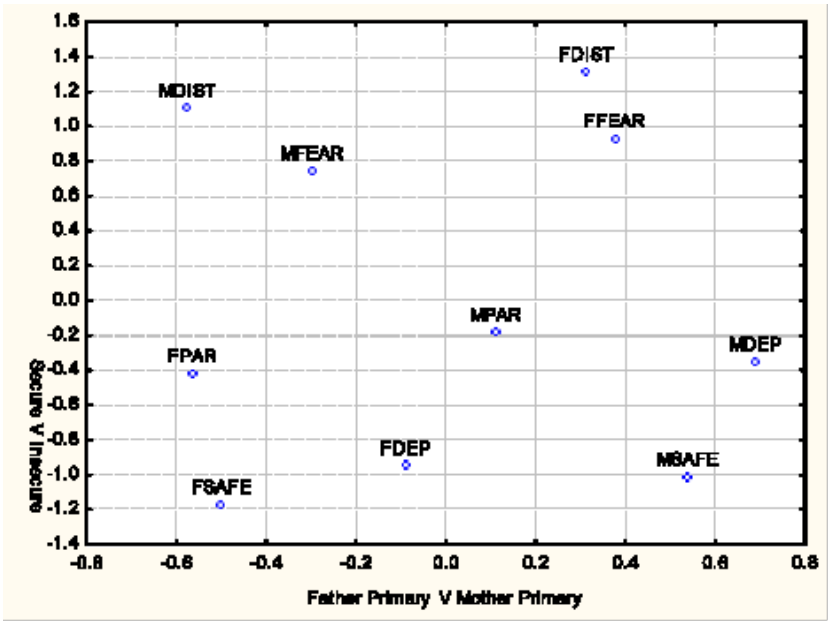
Dimension One: Secure versus Insecure



Similarly, the researchers stated that the graphical representation of Dimension Two in Figure 2.2 indicated a clustering of variables, which represents whether respondents perceive one parent to be the primary caregiver and the other parent to be secondary and located in the perceptual space of Distant and Fearful.

Figure 2.2

Dimension Two: Primary Caregiver versus Secondary Caregiver



In conclusion, the multidimensional scaling of the ASPA found that the patterns of safe, dependent, and parentified were positioned at one extremity of the continuum—regarded as the safe dimension, while the patterns of fearful and distant resided in the other extremity of the continuum—known as the insecure dimension (Snow et al., 2005).

Psychometric Properties of the ASPA. In terms of validity and reliability, the ASPA's Cronbach's alpha coefficients for the mother subscales were: safe, .92, dependent, .74, parentified, .67; fearful, .75; and distant, .86. Likewise, Cronbach's alpha coefficients for the father subscales were found to be: safe, .91; dependent, .65; parentified, .81; fearful, .82; and distant, .91. In terms of norms, Snow et al. indicated that female participants' mean score (M=37.52) on Safe for mother exceeded that of male participants (M=34.31), t(545)=4.05,

p=.000058. In addition, the researchers stated that female participants (M=10.61) scored higher than males (M=9.68) on Fearful in relation to mother, t(556)=2.62, p=.009. On Dependent for mother, Snow et al. referenced the mean score of female participants (M=12.70) exceeded that of males (M=11.66), t(553)=2.84, p=.005. The Cronbach's alpha and number of items for the ASPA are presented in Table 2.5.

Table 2.5

ASPA Cronbach's Alpha and Number of Items

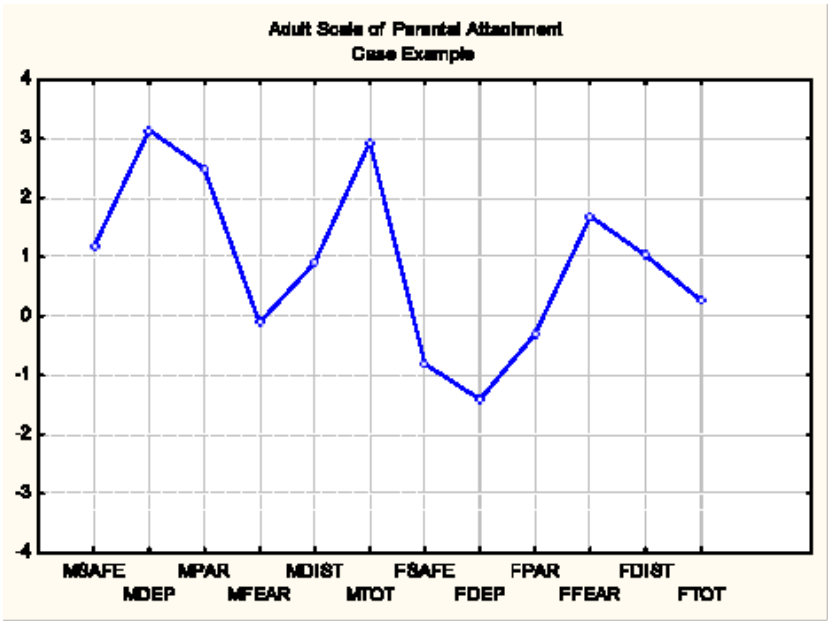
Mother	# Items	Cronbach's Alpha	Father	# Items	Cronbach's Alpha
Total	(26)	.72	Total	(38)	.77
Safe	(10)	.92	Father Safe	(9)	.91
Dependent	(5)	.74	Dependent	(4)	.65
Parentified	(7)	.67	Parentified	(7)	.81
Fearful	(5)	.75	Fearful	(5)	.82
Distant	(9)	.86	Distant	(13)	.91

Scoring of the ASPA. With the intent of explaining the scoring of the ASPA, Snow et al. (2005) randomly selected examples of individual case profiles as seen below along with a summary of the results. For a comprehensive analysis, the researchers utilized the standardized scores to evaluate an individual's pattern of relating, which leads to an overall evaluation of Secure and Insecure attachment both to mother and father figures.

In Figure 2.3, the authors stated that the participant had extremely high scores for mother on Dependent and Parentified along with a score slightly above 1SD on Safe. In addition, the researchers indicated the participant had high scores for father on Fearful and Distant with Safe and Dependent being below 1SD. According to the authors, these scores indicated an Insecure attachment style with Anxious attachment to mother and Avoidant attachment to father.

Figure 2.3

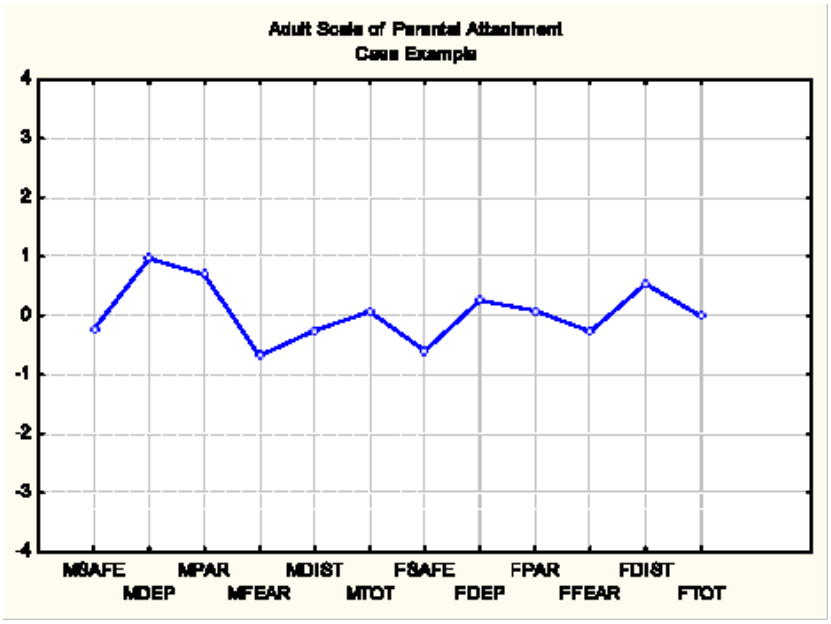
Case Study 1: Anxious Attachment to Mother and Avoidant Attachment to Father



In Figure 2.4, the authors noted the participant indicated a normal pattern of relating to mother on Safe with an elevation on Dependent. According to the researchers, this is an example of the reciprocal pattern of relating with father with a high score on Distant. With both parents, however, the authors stated the levels of relating are within normal range and the attachment style is Secure.

Figure 2.4

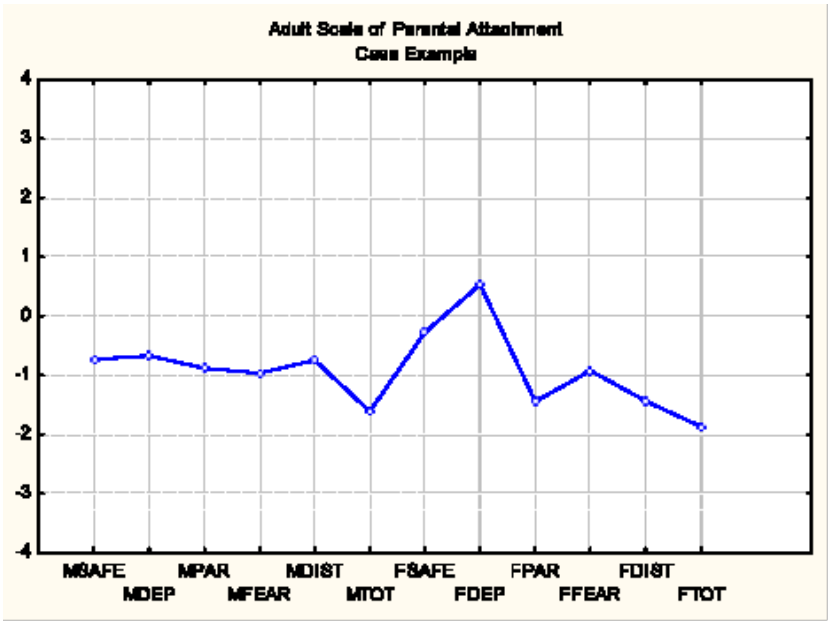
Case Study 2



In Figure 2.5, the authors showed a participant who indicated a reverse pattern from the example in Figure 2.4 with the pattern of relating to father being Safe with a small elevation on Dependent. The researchers referenced the patterns of relating to mother indicated minimal scores in all areas.

Figure 2.5

Case Study 3



Additional research findings of the ASPA. Martin (2005) addressed patterns of relating with peer victimization from three perspectives of bystander, victim, and bully. Martin focused on: a) the adolescents perception of their relationship with their primary caregivers; b) the association between patterns of relating and the roles in peer victimization; and c) dimensions of patterns of relating, roles in peer victimization, gender, age, and ethnicity. Participants in Martin's study included 31 preschool-aged children (ages 2-6), their mothers, and their maternal grandmothers. To examine these styles, the research utilized the ASPA to assess childhood memories and the Marschak Interaction Method Rating System (MIM-RS) to assess the attachment relationship between parent and child. A factor analysis indicated that adolescents have distinct perceptions of their relationships with their paternal figures and that patterns of

relating and the role of bystander, victim, and bully were positively correlated. Martin's study provided an additional outcome variable on teenagers' perceived paternal relationships as it relates to their patterns of relating in peer victimization roles.

Dempster (2007) examined the multiple dimensions that influence patterns of relating, sexual attitudes, and unwanted sex. Utilizing the responses of 488 undergraduate students, the study indicated that insecure patterns of relating were found to relate to experience with unwanted sex. Furthermore, sexual attitudes were found to relate to both patterns of relating and experience with unwanted sex. A multidimensional scaling revealed that insecure patterns of relating are perceived as similar to sexual attitudes and experience with unwanted sex. The study also indicated that safe and relatively safe patterns of relating are conversely perceived as dissimilar to sexual attitudes and experience with unwanted sex along the continuum.

Utilizing Dempster's (2007) archive data, Snow, Martin, Wolff, Stoltz, Helm, and Sullivan (2008) performed an additional exploratory factor analysis on the ASPA and found the results to be consistent to the original five-factor structure. Following the same protocol of the initial study, the researchers utilized a varimax-normalized rotation with a .40 factor loading value. In particular, the researchers indicated the five-factor solution for items related to mother attachment resulted in a cumulative eigenvalue score of 20.80 and a cumulative percent variance of 49.52. Similarly, the investigators found the five-factor solution for items related to father resulted in a cumulative eigenvalue score of 22.64 and a cumulative percent of variance of 53.90. The authors provided the factor loadings, eigenvalues and percent of variance for mother as seen in Table 1. Furthermore, the researchers presented in parentheses in conjunction with the results from Study I for comparison purposes.

Table 2.6

ASPA Means and Standard Deviations

Mother	Max Score	Mean	SD	Father	Max Score	Mean	SD
Factor				Factor			
Safe	45	36.79	7.89	Safe	45	27.61	9.38
Dependent	25	12.46	3.69	Dependent	20	11.08	3.60
Parentified	35	18.03	4.45	Parentified	35	16.58	5.24
Fearful	30	10.40	3.51	Fearful	25	10.25	4.60
Distant	45	15.54	6.07	Distant	65	16.58	5.24
Total		94.19	12.51	Total		92.13	14.52

As previously referenced, the researchers noted that the five factors consisted of the same five patterns of relating that were noted in original study: Safe, Dependent, Parentified, Fearful, and Distant. Unlike the initial study, in which the eigenvalues for the factors were completely reversed for mother and father, the eigenvalues and factors for this study were in the same order for mother and father (Safe, Fearful, Parentified, Distant, and Dependent).

Snow et al. (2008) indicated the item loadings for the factors in the two exploratory studies were, for the most part, very consistent. However, the authors referenced that there were items that either did not load under any factor in one study or loaded in a different factor. In these few cases, the authors stated that an item might have loaded under one factor for mother in both studies, but under a different factor for father. The researchers, after the completion of the factor analyses, utilizing the information as presented in Table 2.7, made a decision to place items consistently under particular factors for the remaining analyses. Those item loadings are presented in Table 2.8. This process resulted in all items being assigned a factor designation for father, but two items (2 and 15) not assigned under any factor for mother.

Table 2.7

Five Factor Analysis of Items 1-84: Comparison of Study I and II Results

Item Mother Father	Safe $F1_1$ ($F1_2$) $F5_1$ ($F1_2$)	Dependent $F2_1$ ($F5_2$) $F4_1$ ($F5_2$)	Parentified $F3_1$ ($F3_2$) $F3_1$ ($F3_2$)	Fearful $F4_1$ ($F2_2$) $F2_1$ ($F2_2$)	Distant $F5_1$ ($F4_2$) $F1_1$ ($F4_2$)
1 43	.672 (.593) .643 (.644)				
2 44	(-----) .445 (.426)			.445	
3 45	.571 (.514) .630 (.538)				
4 46					.511 (.474) .710 (.422)
5 47				.764 (.733) .807 (.770)	
6 48				.810 (.756) .814 (.778)	
7 49				.570 (.696) .637 (.696)	
8 50				.493 (.670) .514 (.612)	
9 51	.445 (.461) (.582)				-----
10 52	.653 (.651) (.729)				-----
11 53				(.563)	.446 (.466) .598
12 54	.723 (.649) .664 (.749)				
13 55	.804 (.783) .766 (.818)				
14 56	.842 (.818) .802 (.829)				
15 57	----- (-----)				.492 (.536)
16 58					.600 (.414) .687 (.507)
17 59				.755 (.743) .740 (.712)	
18 60	(-----) (-----)				.527 .677
19 61				(.615) (.645)	.556 .592

20 62				(.605) (.672)	.534 .521
21 63				 (.591)	.709 (.513) .670
22 64				 (.511)	.557 (.532) .691
23 65			.696 (.784) .810 (.795)		
24 66			.600 (.632) .698 (.660)		
25 67			.645 (.619) .615 (.642)		
26 68	-----				(.543) ----- (.615)
27 69	(-----) (-----)		.506 .568		
28 70			.747 (.800) .838 (.840)		
29 71			.548 (.554) .568 (.559)		
30 72		.655 (.590) .612 (.571)			
31 73	-----				(.562) .570 (.412)
32 74	(-----)		.500 .461 (.503)		
33 75	.812 (.786) .820 (.761)				
34 76	.711 (.687) .584 (.660)				
35 77	-----				(.573) .457 (.588)
36 78					.536 (.570) .678 (.480)
37 79		.459 (.525) .514 (.606)			
38 80	-----	(.416) (.477)			 -----
39 81	-----				(.448) .446 (.590)
40 82		.709 (.703) .717 (.736)			
41 83	 .527 (.446)	.562 (.576)			
42 84		.666 (.662) .609 (.611)			

Eigenvalues	11.14 (9.21) 1.44 (11.30)	5.02 (1.60) 1.84 (1.47)	2.50 (2.38) 2.37 (2.02)	1.71 (5.91) 5.31 (6.05)	1.33 (1.69) 12.15 (1.79)
%Variance	26.51 (21.93) 3.42 (26.94)	11.95 (3.82) 4.37 (3.51)	5.94 (5.66) 5.64 (4.80)	4.07 (14.08) 12.64 (14.40)	3.17 (4.03) 28.93 (4.26)

Table 2.8

Item Loadings for Calculating Means, Standard Deviations, and Cronbach's alpha Comparison of Mother to Father (Original Study and Replication Study)

Item # Item Content

Safe – Study I: Factor 1 for Mother; Factor 5 for Father
Study II: Factor 1 for Mother and Father

1/43 I had my M/F with me when I was upset.
44 I felt lost when I was upset and my F was not around.
3/45 When I was anxious, I desperately needed to be close to my M/F.
9/51 I was confident that my M/F would always love me.
10/52 I was confident that my M/F would try to understand my feelings.
12/54 When I was upset, I was confident my M/F would be there to listen to me.
13/55 I turned to my M/F for many things including comfort and reassurance.
14/56 I talked things over with my M/F.
33/75 I usually discussed my problems and concerns with my M/F.
34/76 It was easy for me to be affectionate with my M/F.
83 I was never certain about what I should do until I talked to my F.

Dependent – Study I: Factor 2 for Mother; Factor 4 for Father
Study II: Factor 5 for Mother and Father

30/72 I felt it was best to depend on my M/F.
37/79 I often felt too dependent on my M/F.
38/80 I wish I could be a child again and be taken care of by my M/F.
40/82 I needed my M/F to take care of me.
41 I was never certain about what I should do until I talked to my M.
42/84 I was helpless without my M/F.

Parentified – Study I: Factor 3 for Mother and Father
Study II: Factor 3 for Mother and Father

23/65 I put my M/F's needs before my own.
24/66 It was hard for me to get on with my work if my M/F had a problem.
25/67 I enjoyed taking care of my M/F.
27/69 I made a fuss over my M/F.
28/70 I sacrificed my own needs for the benefit of my M/F.
29/71 It made me feel important to be able to do things for my M/F.
32/74 I wanted my M/F to rely on me.

Fearful – Study I: Factor 4 for Mother; Factor 2 for Father
Study II: Factor 2 for Mother and Father

5/47 I resented my M/F spending time away from me.
6/48 I felt abandoned when my M/F was away for a few days.
7/49 I had a terrible fear that my relationship with my M/F would end.
8/50 I was afraid that I would lose my M/F's love.
17/59 I got frustrated when my M/F left me alone.
19/61 I got furious when I did not get any comfort from my M/F.
20/62 I got angry at my M/F because I thought she/he could have made more time for me.

Distant – Study I: Factor 5 for Mother; Factor 1 for Father
Study II: Factor 4 for Mother and Father
4/46 I felt relieved when my M/F went away for a few days.
11/53 I worried that my M/F would let me down.
57 Things had to be really bad for me to ask my F for help.
16/58 I wish there was less anger in my relationship with my M/F.
18/60 My M/F seemed to notice me only when I was angry.
21/63 I often felt angry with my M/F without knowing why.
22/64 My M/F was always disappointing me.
26/68 I expected my M/F to take care of her/his problems.
31/73 I wanted to get close to my F but I kept pulling back.
35/77 I was so used to doing things on my own that I did not ask my F.
36/78 I felt there was something wrong with me because I was distant from my M/F.
39/81 I relied on myself and not my F to take care of me.

Items Not Loading in Mother
2 I felt lost when I was upset and my M was not around.
15 Things had to be really bad for me to ask my M for help.

Rayner (2008) utilized the ASPA and the Young Schema Questionnaire (YSQ-S2; Young, 1998) with 250 college students, to examine the relationship between patterns of relating and early maladaptive schemas. Rayner's findings indicated a relationship between subscales of the ASPA and the YSQ-S2. Furthermore, a multiple linear regression revealed that all patterns of relating on the ASPA were individual predictors of schemas on the YSQ-S2.

Bryant's (2011) dissertation was conducted to explore race and gender-specific child-parent relating patterns with an overall goal of addressing rehabilitation services within prisons, and anti-recidivism programs for released prisoners. Three subscales of the ASPA—safe, dependent, and parentified—were found to be significant in a population of 222 prison participants. The findings of the study suggested that patterns of relating to the mother and father

figure have a propensity to differ according to the race and gender of the inmate served. The study also provided insight on race and gender-specific patterns of child-parent relating in the prison population, as well as the prison population as a whole vs. general population; and, may serve as an important outcome variable of parenting styles as perceived by prisoners.

Yang (2011), through a population of 90 academic support program students and 71 honor college students (N=161), examined two areas of college students: 1) academic self-concept and patterns of relating to both parents, and 2) academically high-achieving versus at-risk students in patterns of relating and academic self-concept. The study revealed significant differences in both areas, with specific differences found in the relationships of the subscales of fearful and distant patterns of relating to the mother and a dependent pattern of relating to the father. Both were negatively correlated with academic self-concept.

Test revision of the ASPA. Currently, no revision of the ASPA has been attempted. For this reason, the purpose of this study is to provide a critical item analysis of the ASPA with the intent of creating a short form assessment. Following Widaman, Little, Preacher, and Sawalani's guidelines for creating short forms (2011), the revision will seek to maintain the ASPA's reliability, and thus, precision of the instrument. In addition, the study attempts to further the meaning of the ASPA through evaluations with distinctive populations. The findings will provide an examination of the psychometric properties of the ASPA-SF, which may have an opportunity to contribute to counseling research literature. The test revision process will be discussed in further detail within Chapter Three.

CHAPTER THREE

METHODOLOGY

The topics of concern in this study were the test construction, test tryout, and item analysis of an abbreviated version of the Adult Scale of Parental Attachment (ASPA; Snow et al., 2005). To execute these topics, the research was conducted in four stages. The first stage was to determine the item selection of the ASPA-SF through an exploratory factor analysis. The second stage was to test the ASPA-SF on the same population. The third stage was to explore the factor structure of the ASPA on a population group that has not previously been studied (i.e., participants in prison). The fourth stage was to verify the factor structure through a confirmatory factor analysis and examine the validity of the ASPA-SF to the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979). This chapter includes a description of the participants, statistical software, instruments, procedure and research design, and research hypotheses and statistical analyses that were employed in this study. Before evaluating these descriptions, the chapter will first discuss some important theoretical considerations within this study.

Theoretical Considerations

As there are different theoretical foundations in the process of instrument development, this section will evaluate the philosophies of Classical Test Theory and factor analysis that are utilized within this study. In particular, the research hypotheses that will be answered later in this chapter are based upon the specific statistical approaches of Classical Test Theory and factor analysis. Therefore, an overview of Classical Test Theory and factor analysis will be offered as a foundational basis for the methodology employed before evaluating the individual strategies that will be implemented within this study.

Classical Test Theory. Classical Test Theory (CTT) is a body of related psychometric theories that predict outcomes of psychological testing, such as the difficulty of items or the ability of test-takers (Cohen & Swerdlik, 1998). In general, the purpose of CTT is to understand and improve the reliability of psychological tests. The term classical refers not only to the chronology of these models but also contrasts with the more recent psychometric theories, generally referred to collectively as Modern test theory, also referred to as Item Response Theory (IRT; Kline, 2005). Croker and Algina (1986) referenced that to understand CTT, an individual should first be introduced to the five measurement problems common to all psychological assessments and that all test developers must cope with. First, Croker and Algina cited that there is no single approach to the measurement of any construct that is universally accepted. Second, the researchers referenced that psychological measurements are usually based on limited samples of behavior. Third, Croker and Algina mentioned that the measurement is always subject to error. Fourth, the authors noted the lack of well-defined units on the measurement scales poses still another problem. Lastly, the Croker and Algina stated that psychological constructs cannot be defined only in terms of operational definitions but must also have demonstrated relationships to other constructs or observable phenomena.

Although there are various types of classical test theories, their common foundation maintains the assumption that an individual's observed raw scores (X) are composed of true (T) and error (E) scores. This definition is formally stated as:

$$X = \mathrm{T} + \mathrm{E}$$

CTT, nevertheless, is under no circumstances utilized to analyze individual test scores. The purpose of the theory is on properties of test scores relative to populations of people (Kline, 2005). Thus, CTT is interested with the relations between the three variables X, T, and E in the

population. These relationships among the variables are utilized to report about the quality of test scores and of the test itself (Crocker & Algina, 1986). The most significant concept within test theory is that of reliability. The reliability of the observed test score *X*, which is represented as ρ^2XT, is defined as the ratio of true score variance σ^2T to the observed score variance σ^2X:

$$\rho^2XT = \sigma^2T/\sigma^2X.$$

Since the variance of the observed scores can be shown to equal the sum of the variance of true scores and the variance of error scores, this is equivalent to:

$$\rho^2XT = \sigma^2T/\sigma^2X = \sigma^2T/\sigma^2T+\sigma^2E.$$

This equation—that formulates a signal-to-noise ratio—has intuitive appeal for statisticians and test developers (Kline, 2005). In particular, the appeal is that as the reliability of test scores becomes higher, the proportion of error variance in the test scores becomes lower and vice versa. Therefore, the reliability is equal to the proportion of the variance in the test scores that we could explain if we knew the true scores and the square root of the reliability is the correlation between true and observed scores.

Contrary to what is often suggested in textbooks, Kline (2005) stated reliability is not a fixed property of tests but rather a property of test scores relative to a particular population. According to Kline, this is a result of test scores not being equally reliable in every population, and, for example, the reliability of test scores will be lowered by restriction of range. Therefore, IQ-test scores, which are highly reliable in the general population, will be less reliable in a population of college students. In addition, Kline indicated that test scores are perfectly unreliable for any given individual. According to Kline, this is due to the true score being a constant at the level of the individual, which suggests it has zero variance, with the intention that the ratio of true score variance to observed score variance, and thus reliability, is zero. As Croker

and Algina (1986) referenced in the CTT model, all observed variability in an individual's scores is random error by definition, and therefore, CTT is relevant only at the level of populations and not at the level of individuals.

According to CTT, reliability cannot be estimated directly because that would require one to observe the true scores, which is unachievable (Cohen & Swerdlik, 1998; Kline, 2005). Estimates of reliability, nevertheless, can be achieved by other means in the CTT model. One approach is through constructing a parallel test or using parallel test forms. A parallel test is a test that, for each participant, produces the same true score and the same observed score variance as the original test (Crocker & Algina, 1986; Lord, 1959). At the same time, the estimation of reliability through the use of parallel tests is complicated, as parallel tests are very difficult to obtain and the method is seldom used. Researchers, as an alternative, utilize a measure of internal consistency identified as Cronbach's alpha (Cohen & Swerdlik, 1998; Crocker & Algina, 1986; Kline, 2005). According to Cronbach (1951), Cronbach's alpha can be utilized to present a lower bound for reliability under rather mild assumptions. The reliability of test scores in a population is, therefore, at all times higher than the value of Cronbach's alpha in that population. Because the approach of estimating reliability is more empirically feasible, the method has become very popular within research studies. As earlier referenced, classical test theory's implementation is to reach a suitable definition of reliability, which is intended to make a statement about the general quality of the test scores in question (Croker & Algina, 1986). In short, the general premise of CTT is the higher the reliability, the better the test. While CTT does not state how high reliability is expected to be, Kline (2005) stated that, in general, a value over .80 is considered acceptable and a value over .90 is good. Furthermore, Kline (2005)

referenced values between .70 and .80 are viewed as mediocre but still acceptable and values below .70 are considered unacceptable.

According to researchers, CTT is the most influential theory of test scores in the social sciences (Crocker & Algina, 1986; Kline, 2005). In the study of psychometrics, the models in IRT have succeeded CTT. While the models in IRT have been viewed as more sophisticated, the models have also been referenced as slow acceptance in mainstream research. One of the primary reasons for the slow acceptance and lack of wide use of IRT is the lack of availability of user-friendly software (Croker & Algina, 1986). For instance, IRT is not incorporated in standard statistical packages, such as SPSS.

Factor Analysis. Factor analysis is a customary method utilized in the development of tests that measure individual differences. Thompson (2004) referenced that factor analysis has origins in the study of human intelligence and was created as a procedure for comparing the outcomes of objective tests. In addition, Thompson stated that factor analysis was developed to construct matrices, to define correlations between these outcomes, and discovering the factors that are responsible for these results. Thompson cited the historical development of factor analysis within the field of psychology is usually accredited to Charles Spearman in the early 20th century. Through evaluating school children's scores on a wide variety of apparently unrelated subjects, Spearman determined the subjects were positively correlated. According to Thompson, these results led Spearman (1927) to hypothesize that a general mental ability, or *g*, underlies and shapes human cognitive performance. Spearman's claim is now referenced as the *g* theory and receives broad support in the field of intelligence research (Thompson, 2004).

Expanding on Spearman's concept of a two-factor theory of intelligence, Cattell (1950) utilized a multi-factor theory to explain intelligence and address alternate factors in intellectual

development—including motivation and psychology. Cattell created various mathematical methods for adjusting psychometric graphs. These methods included: scree test, similarity coefficients, and lead to the formation of Cattell's theory of fluid and crystallized intelligences. Furthermore, Cattell was a strong advocate of factor analysis and presumed that all theory should be produced from research and the utilization of empirical observation and objective testing to human intelligence. Since the original efforts of Spearman and Cattell, researchers have continued to use factor analysis procedures and expanded both theories concerning individual differences and the tests that are utilized to measure them (Lohman, 1989).

In regards to the basic hypothesis of the factor analysis, the procedure presumes that within any given domain of human performance there exist a small number of common factors that influence the numerous surface attributes of an individual (i.e., attributes that can be observed and measured; Kim & Mueller, 1978a). For example, tests could be created that measure different kinds of attributes in the domain of mental abilities. In this instance, tests could measure addition problems, spelling, or memory, as each one of these test denote a surface attribute. A vital aspect of this basic hypothesis pertaining to factor analysis and surface attributes is that there exist internal attributes. An internal attribute is the unobservable characteristics of individuals that differ between individuals in degree and are more fundamental that surface attributes (Kim & Mueller, 1978a). Furthermore, a set of surface attributes measured by a given test is identified as a battery of surface attributes. For example, when evaluating the surface attribute of mental ability, internal attributes could be numerical, verbal, or performance ability.

Although internal attributes cannot be directly measured, internal attributes are reflected when an individual acquires a measure of the surface attribute. In this case, internal attributes are

frequently identified as factors. There are two types of internal attributes or factors: common and specific. First, common factors are those internal attributes that influence more than one surface attribute in the selected battery. If the selected battery of surface attributes within a test consists of more than one that is affected by verbal ability—e.g. both a spelling and reading test—then verbal ability is a common factor. Conversely, specific factors only affect one of the surface attributes within the battery. Although there may be a number of specific factors for any given surface attribute, their effect can be regarded as being combined into a single specific factor. The fundamental tenet is that internal factors influence surface attributes in a systematic manner (Gorsuch, 1990). Therefore, the mathematical methods of the factor analysis are employed to identify and explain the nature of this relationship. During scale development, researchers will generally utilize the two types of factor analysis known as exploratory factor analysis and confirmatory factor analysis.

Exploratory Factor Analysis. An exploratory factor analysis (EFA) is generally utilized to learn the factor structure of a measure and examine the measure's internal reliability. EFA is regularly suggested when researchers have no hypotheses about the nature of the underlying factor structure of their measure. According to Costello and Osborne (2005), over 1700 studies employed EFA methods during a two-year period. Furthermore, Costello and Osborne stated, that while the EFA represented the norm in literature, the method is a complex method with few absolute guidelines and an array of options. The researchers referenced that combining to this confusion is that EFA choices differ across software packages, and in most cases, these options are not very well defined. Costello and Osborne also cited that study design, data properties, and the question of interest all have a bearing on which procedure will yield the maximum benefit. Literature reviews have suggested four primary issues that should be considered when

determining the best EFA procedure: 1) adequate sample size to achieve accurate parameter estimates and appropriate power; 2) method of extraction, 3) a factor model and estimation model, and 4) a rotational criterion: orthogonal vs. oblique rotation (Costello & Osborne, 2005; Schmitt, 2011).

Adequate sample size. The first concern within the choice of EFA procedure appropriateness concerns sample size. While the literature on factor analysis has several recommendations relating to sample size rules of thumb, the rules of thumb is varied, ambiguous, and often lacks validity (MacCallum, Widaman, Zhang, & Hong, 1999; Marsh, Hau, Balla, & Grayson, 1998). Schmitt (2011) emphasized that appropriate sample size relies on the precision and power of the models parameter estimates. Precision is defined as a test of how consistent or well the parameters and their standard errors are estimated. On the other hand, power is 1 minus the probability of committing a Type 2 error, with .80 most commonly defined as adequate power (Cohen, 1988). According to Schmitt, adequate sample size is frequently concerned with statistical power because when adequate power is achieved, precision of parameter estimates will also be realized.

Some researchers have suggested the subject-to-item ratio of five-to-one as necessary for deriving a suitable factor solution (Arrindell & van der Ende, 1985; Kass & Tinsley, 1979). Costello and Osborne's literature review (2005) proposed the best determinant of subject size is the ratio of subjects to items. These authors also found that strict rules regarding sample size for EFA have largely disappeared. Other researchers have suggested that adequate sample size is partially determined by the nature and availability of the data (Fabrigar, Wegener, MacCallum, & Strahan, 1999). In general, researchers agree that the stronger the data, the smaller the sample

can be for accurate analysis (Mulaik, 1990) and that a factor with three or fewer items is usually weak and unstable (Costello & Osborne, 2005).

The Satorra–Saris method (Satorra & Saris, 1985) is one of the most well known approaches for evaluating power of the likelihood ratio test (see also Brown, 2006; Kim, 2005). In the Satorra-Saris method, Schmitt (2011) stated that researchers assess a null model to an alternative model regarding the population or true values. The null model is the equivalent as the alternative model barring the single parameter being tested. Furthermore, Schmitt referenced the null model is nested in the alternative model. Unfortunately, Schmitt noted the Satorra-Saris method is limited based on five premises. First, concerning the difficulty of defining an alternative model or an alternative parameter value to be tested. Second, regarding the difficulty in testing every parameter. Third, concerning the notion that not all alternative models are testable. Fourth, relating to researchers having to make exact estimates of the population values. Lastly, regarding that the Satorra-Saris method does not evaluate the precision of parameter estimates. Other researchers have employed the Satorra–Saris method applying bootstrapping (Yuan & Hayashi, 2003). The bootstrap method can be employed with non-normal and missing data, but the procedure needs a large raw data set to determine power (Brown, 2006; as cited in Schmitt, 2011).

Through using the Monte Carlo method, Muthén and Muthén (2002) evaded the raw data requirement and the lack of parameter precision estimates to simulate raw data from known parameters at various sample sizes. Similar to the Satorra–Saris method, the Muthén–Muthén approach necessitates parameter population values. The Muthén–Muthén approach can be employed with different types of models, data, and estimation methods. In particular, the approach permits researchers to indicate a wide range of models that will reflect the particular

types of variables (e.g., continuous, categorical) and distributions (normal, nonnormal, etc.) found in their studies. In addition, the Muthén–Muthén approach has another important advantage in that the method randomly generates multiple samples from the population values, thus allowing researchers to assess the precision of the parameter estimates and their standard errors and, consequently, the confidence intervals. Schmitt (2011) emphasized that researchers should check precision because if parameter and standard error estimates are inaccurate at a sample size, the power estimates will be irrelevant.

MacCallum, Browne, and Sugawara (1996) introduced another approach through calculating the power based on the root mean square error of approximation (RMSEA). According to the Schmitt (2011), the difficulty with MacCallum–Browne–Sugawara method originates from the current debate about the strict use of cutoffs with approximate fit indexes (AFIs) and whether or not fit indexes are even appropriate for evaluating models (e.g., Marsh, Hau, & Wen, 2004; Vernon & Eysenck, 2007). Overall, Schmitt (2011) noted there is little empirical support for the utilization of universal cutoff values for RMSEA to decide adequate model fit. Some researchers argue this is the case because to attain a particular level of power the cutoff value of RMSEA is contingent on the specification of the model, the degrees of freedom, and the sample size (Chen, Curran, Bollen, Kirby, & Paxton, 2008).

There have been numerous rules-of-thumb recommendations of appropriate sample sizes based on sample size relative to the number of parameters being estimated (e.g., Jackson, 2007) and the number of variables per factor (e.g., Marsh et al., 1998. Although these are referenced, Schmitt (2011) argued the limitation of these recommendations is the model(s) evaluated and the conditions studied. In other words, Schmitt stated the sample size is very much dependent on many factors that are inconsistent across models. Although the methods are limited by required

empirical data or prior knowledge, Schmitt suggested the Satorra–Saris method employing bootstrapping and the Muthén–Muthén method utilizing Monte Carlo simulation are reasonable approaches for deciding sample size. Likewise, some researchers have offered a logical view that the Muthén–Muthén Monte Carlo approach is the best method for assessing power as the procedure allows researchers to incorporate a wide variety of frequently encountered conditions into their model and examine precision of the parameter and standard error estimates (Barrett, 2007; McIntosh, 2007; as cited in Schmitt, 2011).

Regardless of what approach is selected for power determination and precision assessment, researchers must be informed of the occurrence of isopower (Schmitt, 2011). According to MacCallum, Lee and Browne (2010), isopower is the phenomenon that different models, along with changes in other factors, can result in the same amount of power when testing a given null hypothesis. As the researchers noted, researchers need to recognize isopower and consider altering the conditions. Furthermore, the authors referenced how researchers should examine how isopower affects power or hold power constant, while also evaluating alternative sets of conditions that yield the same power. Similarly, Schmitt (2011) argued that researchers, at minimum, should cite that their findings are not isomorphic and that in all probability an infinite number of conditions are present that will produce the same power results.

Method of extraction. The second issue in EFA procedures appropriateness is the method of extraction. The Principal Components Analysis (PCA) is the default method of extraction of many popular statistical packages. PCA consists of a mathematical procedure that transforms a number of (possibly) correlated variables into a (smaller) number of uncorrelated variables called principal components. The first principal component accounts for as much of the variability in the data as possible, and each succeeding component accounts for as much of the remaining

variability as possible. Thus, the objectives of the PCA is to: 1) discover or to reduce the dimensionality of the data set, and 2) identify new meaningful underlying variables. According to Bentler and Kao (1990), statisticians argue on the effectiveness of PCA, as the procedure is not a true method of factor analysis because of the partition of shared variance, and when the partition should be utilized. Some researchers contend that the utilization of PCA should be limited in support of a true factor analysis method (Snook & Gorsuch, 1989). Other statisticians maintain there is virtually no distinction between PCA and factor analysis, or that PCA is the preferable method of analysis (Velicer & Jackson, 1990). Although the PCA is the most common in literature and default method of extraction, the researcher determines choice of extraction method (Costello & Osborne, 2005).

In addition to PCA, there are other factor analysis extraction methods. For instance, SPSS has four besides PCA: 1) unweighted least squares, 2) generalized least squares, 3) maximum likelihood (ML), and 4) principal axis factoring (PAF), alpha factoring, and image factoring. According to Costello and Osborne (2005), information concerning the relative weakness and strengths of each of these extraction methods is scarce. There are no exact names for several of these methods, which complicates the matter more. Some researchers have argued that if the data being analyzed are relatively normally distributed, the maximum likelihood (ML) extraction method is the best choice. These authors stated this perspective because ML permits for the computation of a wide range of indices of the goodness-of-fit of the model and allows statistical significance testing of factor loadings and correlations among factors and the calculation of confidence intervals (Fabrigar, Wegener, MacCallum & Strahan, 1999). If the assumption of normality of the data is violated, these researchers proposed one of the principal factor methods; in SPSS a method called Principal Axis Factors (PAF; Fabrigar et al., 1999). According to

Costello and Osborne's literature review, research has generally suggested that ML or PAF will give the best results, depending on whether the data are generally normally distributed or not.

Number of factors to retain. The third concern involves the number of factors to retain. According to Costello and Osborne (2005), both underextraction and overextraction of the factors to be retained can have deleterious effects on the results. The most widespread method to determining the number of factors in statistical packages is to preserve all factors with eigenvalues greater than 1.0 and to then generate a scree plot. A scree-plot is a two dimensional graph with factors on the x-axis and eigenvalues on the y-axis. Eigenvalues signify the variance described by each underlying factor. In addition, eigenvalues are not accounted for by percentages but scores that total to the number of items. When evaluating a scree plot, the first two factors account for most of the variance and have the highest eigenvalues. Consequently, the remaining factors all have small eigenvalues. There is, however, extensive agreement amongst psychometric researchers that this approach is one of the least accurate methods for selecting the number of factors to retain (Velicer & Jackson, 1990). Some of the other well-known methods consist of Kaiser criterion (K1), the scree test (i.e., a visual plot of the eigenvalues), the minimum average partial (MAP) method, the $\chi 2$-based tests or the likelihood ratio test (LRT), and parallel analysis (PA; Schmitt, 2011). While these alternative tests for factor retention are available, some of the methods (i.e., scree test, Velicer's MAP criteria, and parallel analysis) are not accessible in the most commonly utilized statistical software packages and must be calculated by hand. Therefore, researchers depend on the default method established in most software packages, which is removing those factors with eigenvalues less than 1.0 (Cosstello & Osborne, 2005).

Rotation criteria. Once an initial solution is established and the number of factors for retention has been determined, the next choice is the method utilized for rotation. In EFA, rotating factors is fundamental, as the clusters of variables are unlikely to be identified by the initial factor extraction methods (Gorsuch, 1983). The goal of factor rotation is to maximize high loadings and minimize low loadings with the intention that the simplest possible structure is achieved. Therefore, rotation works to mathematically simplify and clarify the data structure through making the output more understandable and facilitating the interpretation of factors. Rotation does not affect the sum of eigenvalues, although rotation will alter the eigenvalues and percent of variance explained by particular factors and will change the factor loadings (Child, 1990). There are two basic types of rotation: orthogonal and oblique. Orthogonal rotation assumes the factors are uncorrelated with one another. In addition, orthogonal rotation is the default setting in most statistical packages. The orthogonal methods of varimax, quartimen, and promax rotations produce factors that are uncorrelated. In oblique rotation, the factor loadings are based on the assumption that the factors are correlated.

Costello and Osborne (2005) referenced that researchers in the social sciences are recommended to utilize orthogonal rotation because the method produces more easily interpretable results. Conversely, Henson and Roberts (2006) argued that researchers commonly provide little rational for choice of rotation method (e.g., Promax, Quartimin, Equamax, etc.). Sass and Schmitt (2010) stated that researchers also offer little evidence on how the selected rotation criterion may influence factor structure interpretation. Alternately, some researchers have suggested a rotation method is often arbitrarily based on how frequently the approach occurs in literature, which is commonly the orthogonal varimax criterion (Fabrigar et al., 1999; Ford, MacCallum, & Tait, 1986; Henson & Roberts, 2006; Russell, 2002). Referencing that most

psychological and educational factors are correlated, Schmitt (2011) argued that assuming factors are uncorrelated and employing the varimax criterion creates unrealistic factor structures. In addition, Schmitt stated that when factors are not allowed to correlate, item loadings would become inflated if the factors were truly correlated. Because oblique rotation methods generally produce accurate and comparable factor structures to orthogonal methods even when interfactor correlations are insignificant, Schmitt strongly recommended that researchers only use oblique rotation methods, as the procedures commonly result in more realistic and more statistically sound factor structures. According to Costello and Osborne (2005), orthogonal rotation is seen as slightly easier than that of an oblique rotation in SPSS output, although the substantive interpretations of orthogonal and oblique rotations are essentially the same.

Confirmatory Factor Analysis. A Confirmatory Factor Analysis (CFA) builds upon the premise of exploratory factor analysis in classical test theory. Structural equation modeling software is generally employed for performing confirmatory factor analysis. A CFA is similar to EFA in that both statistical procedures are utilized to investigate the internal reliability of a measure. Both the EFA and CFA: a) are employed to examine the theoretical constructs, or factors, that might be represented by a set of items; b) can assume the factors are uncorrelated; and c) are operated to examine the quality of individual items. However, there is one major distinction between EFA and CFA. The purpose of EFA is to find the one underlying factor model that best fits the data, while the CFA permits a researcher to enforce a predetermined factor model on the data and see how well the model explains responses to the measure. With the EFA, the researcher allows the observed data to ascertain the underlying factor *a posteriori* (i.e., reasoning inductively to infer a model from observed data). With the CFA, the researcher develops a factor model *a priori* (i.e., reasoning deductively to theorize a structure previously).

Therefore, the EFA signifies a tool for theory building, while the CFA represents a tool for theory testing (Bollen, 1989).

In the CFA model, as with EFA, each response in a data set is deemed to be an observed indicator of one or more underlying latent constructs (or factors). Bryant and Yarnold (1995) cited that CFA supposes that there are two main sources of variation in the responses to the measure of interest. In particular, the authors referenced that individuals' scores on measured variables are presumed to be effected by latent underlying factors and by unique-measurement error, or the influence of unmeasured variables and random error. In addition, while the researchers noted that EFA supposes that the unique errors in the observed indicators are uncorrelated with one another, the CFA permits these measurement errors to be either independent or correlated. With CFA, therefore, Bryant and Yarnold emphasized that a researcher can distribute the error variance that variables share because of common methods of assessment to evaluate relationships between variables independent of both unique and correlated measurement error.

Similar to the EFA model, the strength of the relationships between variables in the CFA are affected by sample size, like estimates of measurement error variance and the contribution of random error. According to Good (1973), these relationships are a product of mathematically calculating an estimate of one statistic from an estimate of another, and the limitations or restrictions inherent to this procedure. Limitations in CFA are identified as degrees of freedom. Degrees of freedom are directly associated to sample size, *n*, where *n* can be considered one individual piece of information. The sum of these portions of information can be operated to estimate either model parameters or variability (Toothaker & Miller, 1986). When model parameters or variability are estimated, however, a researcher loses precision every time a

statistic is calculated (Jaccard & Becker, 1990). Degrees of freedom are a measure of the amount of information from the sample data that has been utilized to evaluate the specific statistic (Jaccard & Becker, 1990). Degrees of freedom are mathematically defined by statisticians as the number of observations minus the number of necessary parameters, or $n - 1$. For instance, if there are four numbers (e.g., a, b, c, and d) that must add up to a total of m and an individual is free to determine the first three numbers at random but the fourth must be chosen so that the number makes the total equal to m, the degrees of freedom is three. In general, degrees of freedom are less influential as sample size increases and the distribution of the sample moves toward normal. In particular, literature recommends that when the sample size of the test statistic is less than 30, the distribution of that test statistic cannot be ensured to be normal (Galfo, 1985).

As previously referenced, the technical and procedural aspects of the EFA and CFA are comparable. However, in the EFA model, researchers determine the number of factors through evaluating output from a principal components analysis. In the CFA model, researchers must denote the number of factors *a priori*, the principle difference between the EFA and the CFA (Kim & Mueller, 1987b). Specifically, the CFA necessitates that a factor structure be identified ahead of time. Thus, researchers recognize in CFA that the items load on specific factors, which differs to the EFA that permits all items to load on all factors. A further distinction between the two procedures is that the CFA offers goodness-of-fit indices of the hypothesized factor structure to the observed data. In general, researchers use maximum likelihood to estimate factor loadings, whereas with the EFA Maximum Likelihood (ML) is only one of a variety of estimators utilized. Finally, the CFA lets the researchers to perform two methods. First, CFA allows researchers to denote correlated measurement errors and constrain loadings or factor correlations to be equal to one another. Second, the CFA model permits researchers to perform statistical comparisons of

alternative models, test second-order factor models, and statistically compare the factor structure of two or more groups (Lawley & Maxwell, 1971).

Different to EFA, which extracts factors from the data in the one way that maximizes the common or total variance explained, the CFA uses a pre-specified model to produce a predicted set of item interrelationships. According to Lawley and Maxwell (1971), the distinction between these predicted interrelationships and the actual observed interrelationship is known as a fitted residual. A fitted residual is evaluated by a goodness-of-fit index (GFI). The most frequently employed goodness-of-fit indices are: the Tucker-Lewis coefficient (TLC), adjusted goodness-of-fit (AGFI), comparative fit index (CFI), incremental fit index (IFI), and the Normed fit index (NFI), The GFI and the AGFI (Joreskog & Sorbom, 1984) examine the capability of a paradigm to replicate the variance-covariance matrix. Specifically, the AGFI modifies the GFI for the number of degrees of freedom expended in estimating model parameters. The Normed Fit Index (NFI; Bentler & Bonnett, 1980) examines model fit to that of a model for the same data assuming independence of the measured or observed variables. Although the approach is popular in research, the NFI has been found to underestimate when the sample size is small. For this reason, Bentler and Bonnett (1990) proposed the Comparative Fit Index (CFI) that takes sample size into account.

According to Byrne (1998), researchers should also consider the other goodness-of-fit indices of the root mean square residual (RMR), root mean square error of approximation (RMSEA), and the standardized root mean residual (SRMR). The RMR, which measures the average size of the residuals produced by the particular model, is utilized to evaluate the fit of two or more different models from the same data and represents the absolute value of the average fitted residuals for a given model (Lawley & Maxwell, 1971). The RMSEA is different from the

RMR in that the index focuses on estimated population fit. Lastly, the SRMR examines the average residual value for the variance-covariance matrix and will be lower when there are a high number of parameters in the model and in models based on large sample sizes. Concerning RMSR, RMSEA, and RMR, the closer these values are to zero, the better the fit of the model (Byrne, 1998).

Although the various fit indices outlined evaluate different aspects of fit, Byrne (1998) stated that researchers should also evaluate model fitness on multiple fit statistics as to ensure that judgments will not be an artifact of analytic choice. In addition, Byrne referenced the assessment of model fit must be established on multiple criteria that take into account theoretical, statistical, and practical consideration. In general, Byrne noted that most of comparative fit indices—except the RMSR, RMSEA, and the RMR—display how well the given factor model fits the data and share a common feature of ranging between zero and one, with higher values indicating better fit.

While most statistical methods only require one statistical test to determine the significance of the analyses, in CFA a number of statistical tests are used to determine how well the model fits to the data (Suhr, 2006). According to Schermelleh-Engel, Moosbrugger, and Müller (2003), researchers should be aware that a good fit between the model and the data does not mean that the model is "correct", or even that the model explains a large proportion of the covariance. On the other hand, the researchers stated a "good model fit" only indicates that the model is plausible. Furthermore, Jackson, Gillaspy, and Purc-Stephenson (2009), suggested that when reporting the results of a confirmatory factor analysis an individual should report: a) the proposed models, b) any modifications made, c) which measures identify each latent variable, d) correlations between latent variables, e) any other pertinent information, such as whether

constraints are used. The researchers also recommended that in regards to selecting model fit statistics to report, an individual should not merely report the statistics that estimate the best fit, even though this might be enticing.

Participants

The participants within the study (N=1739) will all be retrieved from archive data. Utilizing the research studies of Snow et al. (2005), Matthews (2005), Dempster (2007), Rayner (2008), Bryant (2011), and Yang (2011), the archive data will provide a basis for examining the research questions. All the participants within the existing collection were voluntary adults over the age of 18. Although some general demographic information may be available within the archive data, no identifying facts on the participants will be obtainable. Therefore, no threats of anonymity and confidentiality should be present in the study.

Statistical Softwares

The statistical software utilized in this study was SPSS 20 and AMOS 6.1. The archive data (N=1739) was converted from Statistica to SPSS 20 and AMOS 6.1. Furthermore, all the data was scrutinized for missing and incorrect data to promote accurate findings. Because structural equation modeling software can be implemented to execute a confirmatory factor analysis, AMOS 6.1 will be used in conjunction with SPSS 20. SPSS 20 served to perform the exploratory factor analyses, while AMOS 6.1 operated to apply the confirmatory factor analysis. In addition, AMOS 6.1 offered the opportunity to show a graphical output of the ASPA-SF structural model.

Instruments

The study evaluated the Adult Scale of Parental Attachment (Snow et al., 2005), available demographic information on participants, the Parental Bonding Instrument (PBI; Parker, Tupling,

& Brown, 1979), and a newly formed abbreviated version of the ASPA (i.e., ASPA-SF) from the responses within archive data. The following sections will evaluate the instruments in further detail.

Demographic Information. Any demographic information on the participants in the archive data will be accounted. If available, specific items that will be noted in the study will include the participants' age and gender. Furthermore, ethnicity and familial background information will be recorded if accessible in the archive data.

The Parental Bonding Instrument. The Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979) is a widely used assessment tool for measuring parental characteristics that affect parent–child bonds. The instrument was designed to measure parental styles as perceived by the respondents during their first 16 years. The PBI utilizes a Likert-type scale (ranging from 0 to 3) consisting of 25 items related to father and mother. The scale was originally conceived to measure two factors: care (affection and warmth versus coldness and rejection) and protection (control and intrusion versus encouragement of autonomy). While the initial formulation perceived a two-factor model, psychometric analyses have yielded discrepant results as to whether the PBI is best represented by a two-factor model—care and overprotection—or a three-factor model—care, overprotection, and autonomy (Murphy, Brewin, & Silka, 1997). In the three-factor model, researchers suggested the second factor—overprotection—could be split into two other factors (i.e., protection and autonomy).

The PBI is considered to be the most consistent measure used to check parental style either in clinical or in non-clinical samples (Enns, Cox, & Clara, 2002). According to Wilhelm, Niven, Parker, and Hadzi-Pavlovic (2005), the instrument has demonstrated stability over a 20 year period, and mood and life experiences have had a low impact on the stability in the

perception of parental bond measured using the PBI. In the last few decades, the PBI has become very popular due to the instrument's fast and easy administration, and the final score is readily calculated. Furthermore, the PBI has been used in several studies that relate parental bond and psychology. According to Parker (1983), the PBI has been shown to have satisfactory construct and convergent validity and to be independent of mood effects.

The Adult Scale of Parent Attachment. The Adult Scale of Parental Attachment (ASPA; Snow et al., 2005) measures the respondents' perceptions of early experiences with parents before the age of 14. The instrument consists of 84 matching questions concerning relationship experiences with both mother and father. Examples of items include "I was helpless without my father" and "I had my mother with me when I was upset." In addition, the ASPA is scored on a 5-point Likert-type response choice scale of never, seldom, sometimes, frequently, and constantly with never receiving 1 point and constantly receiving 5 points. Through two exploratory factor analyses, the ASPA was found and replicated to have five different patterns of relating: with three in the secure dimension (i.e., safe, dependent, and parentified), and two in the insecure dimension (i.e., distant and fearful; Snow et al., 2005; Snow et al., 2008).

The ASPA has been normed and found to have good construct validity and internal reliability (Snow et al., 2005; Snow et al., 2008). Cronbach's alpha coefficients for the subscales for the mother are: safe, .92, dependent, .74, parentified, .67; fearful, .75; and distant, .86. Likewise, Cronbach's alpha coefficients for the father subscales were found to be: safe, .91; dependent, .65; parentified, .81; fearful, .82; and distant, .91. In terms of norms, Snow et al. indicated that female participants' mean score (M=37.52) on Safe for mother exceeded that of male participants (M=34.31), $t(545)=4.05$, $p=.000058$ (Snow et al., 2008).

The Adult Scale of Parental Attachment-Short Form. The Adult Scale of Parental Attachment Short-Form (ASPA-SF) was created from the original ASPA, which measures the respondents' perceptions of early experiences with parents. While the original instrument consists of 84 matching questions concerning relationship experiences with both mother and father, the abbreviated version was to include fewer questions—i.e., the shorten version was to include less items per scale. Like the original ASPA, the ASPA-SF was to inquire participants to answer questions based on their childhood memories of their relationships with their mother and father. Similarly, the ASPA-SF was also scored on a 5-point Likert-type response choice scale of never, seldom, sometimes, frequently, and constantly with never receiving 1 point and constantly receiving 5 points. The ASPA-SF was to explore the same factors of the original ASPA as a basis for creating the instrument (i.e., the secure dimension: safe, dependent, and parentified, and insecure dimension of distant and fearful). A range of solutions was attempted and scrutinized by the researcher for goodness of fit and meaningfulness using procedures suggested by Kruskal and Wish (1978).

Procedure and Research Design

The procedure and research design of this study was performed in four stages. Before performing these four stages, approval from the International Review Board was acquired. Once approval was obtained the subsequent procedures took place during the fall semester of 2013 and the spring semester of 2014. The first stage was to construct the ASPA-SF through an exploratory factor analysis on 1,075 archive participants (Snow et al., 2005; Dempster, 2007). After the items were selected for internal consistency reliability, the second stage was to include the test tryout of the ASPA-SF with the same population. Building upon the test construction and test tryout, the next stage examined whether the factor structure of the ASPA-SF can be verified

through a confirmatory factor analysis with a different archive data set of 250 participants (Rayner, 2008). Using these same participants, the study also evaluated the validity of the ASPA-SF to the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979). The last stage utilized an exploratory factor analysis on an archive prison population of 222 participants, which offered additional meaning of the ASPA-SF's factor structure to a specific group of people. The following sections will evaluate the four stages in further detail.

Stage One: Test Construction of the ASPA-SF. The first stage was to construct an abbreviated version of the ASPA through an item analysis of 1,075 archive responses. Utilizing the data from the ASPA's two exploratory factor analysis (Snow et al., 2005; Dempster, 2007), the formation of the ASPA-SF was examined. The objective of creating the ASPA-SF was to be a shorten revision of the ASPA by reducing the number of items on each scale while exploring the original factor structure. Before executing the exploratory factor analysis on the original ASPA, the data was inspected for missing and incorrect variables. According to G*Power 3.1, the collective sample set of 1,075 participants provided the item selection of the ASPA-SF with the input parameters of an effect size of .3, an alpha error probability of .05, and a power of over .99. Thus, this sample size was more than adequate to determine the precision parameters and power of the original 84-item ASPA instrument, as the subject-to-item ratio in this initial stage of instrument revision is over 25-to-1.

Within this first stage of test construction, items were chosen to capture the specific construct and to avoid redundancy. The goals of the item selection procedure were to reduce the length of the ASPA while: 1) exploring the content of all five factors measured by the ASPA of Safe, Dependent, Parentified, Fearful, and Distant, 2) retaining a minimum of three items per scale, 3) maintaining significant reliability estimates, 4) providing a factor structure in which

goodness-of-fit indices met acceptable standards, and 5) examining the original context of each of the five ASPA factors of Safe, Dependent, Parentified, Fearful, and Distant. Thus, the study sought to insure that the factors represent the major domains of the ASPA and that each tapped into a different aspect of patterns of relating while maintaining the significant reliability estimates in the original instrument. The item selection process within this stage also allowed for an *a posteriori* calculation of the validity and reliability of the ASPA-SF.

Stage Two: Test Tryout of the ASPA-SF. The second stage resulted in a test tryout of the ASPA-SF through an analysis of the same archive participants from the first stage. Although there are no particular rules to tryout size, the study sought to follow the suggestions of ten respondents per test item (Cohen & Swerdlik, 1998; Arrindell & van der Ende, 1985; Kass & Tinsley, 1979) and the more participants in the tryout reduces the role of chance in succeeding statistical and factor analyses (Floyd & Widaman, 1995). The test tryout also offered the researcher to better investigate the items, and thus, provide a stronger foundation for the ASPA-SF. In addition, all of the archive data was checked for missing or incorrect variables before an exploratory factor analysis (EFA) was executed on the tryout.

Stage Three: Item analysis—CFA and Validity. Archive data of 250 participants from Rayner's (2008) study was used to conduct a confirmatory factor analysis (CFA) and also determine the validity of the ASPA-SF to the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979). Furthermore, the CFA was used to verify whether the factor structure of the ASPA-SF required modification. Akin to the previous stages, the data met the minimum requirement by Tabachnick and Fiddell (2007) of a minimum of 200 participants for a factor analysis. While the purpose of the EFAs was to find the one underlying factor model that best fits the data, the CFA permitted the researcher to enforce the predetermined factor model on the

data and see how well the model explained responses to the measure. Therefore, this study allowed the researcher to develop a factor model *a priori*—reasoning deductively to theorize a structure previously—and determine whether the ASPA-SF represented a tool for theory testing.

This stage also provided an understanding of the ASPA-SF's validity. Utilizing the same participants from Rayner's study, stage three examined the concurrent and discriminant validity of the ASPA-SF to the PBI (Parker, Tupling, & Brown, 1979). Through answering both the ASPA-SF and PBI instruments, the psychometric properties of the instrument were examined for validity and additional meaning through a comparison of the two instrument's factor models.

Stage Four: Item Analysis—EFA on a Prison Population. The fourth stage was to explore the factor structure of the ASPA-SF on an archive data collection of 222 prison participants (Bryant, 2011). While there are no hard rules for determining adequate sample size, Tabachnick and Fidell (2007) recommended at least 200 participants for determining adequate sample size in a factor analysis. Therefore, this study met the minimum requirement by the authors. In examining the ASPA-SF on a different participant group, further understanding of the instrument's factor structure was presented in this stage. Although the five-factor structure has been found in two previous studies of undergraduate and graduate students in the original ASPA, no current investigation of the factor structure outside of a college population has been performed. The importance of this EFA is the method will allow the researcher to ascertain the underlying factor *a posteriori* (i.e., reasoning inductively to infer a model from observed data) for the ASPA-SF. Furthermore, an EFA on a different population group was beneficial for additional meaning of the ASPA-SF. Specifically, these findings should provide a basis of whether the factor structure can be replicated within a divergent sample when compared to the previous EFA studies (i.e., college students).

Research Hypotheses and Statistical Analyses

The purpose of this study was to: a) construct the ASPA-SF through an exploratory factor analysis, b) to tryout the ASPA-SF through a different exploratory factor analysis, c) verify the factor ASPA-SF's factor structure through a confirmatory factor analysis, d) evaluate the concurrent and discriminant validity of the instrument with the Parental Bonding Instrument (Parker, Tupling, & Brown, 1979), and e) examine the ASPA-SF's factor structure with a prison population. The following are hypothesizes associated with the research study:

Research Hypothesis 1.

Ho1: The ASPA-SF is not an internally consistent instrument to measure patterns of relating.

Ho1: The ASPA-SF is an internally consistent instrument to measure patterns of relating.

The objective of analyses was to produce an internally consistent instrument to measure patterns of relating in this research. Toward this end, three analytical procedures were employed: exploratory factor analysis, item reliability analysis on each of the five subscales, and item reliability on the total scale. A combination of techniques were employed so that multiple criteria could be used for the selection of final scale items (Nunnally, 1978; Malhotra, 1981). Furthermore, due to the multi-dimensional nature of the use patterns of relating concept, reliability analysis on the total scale was not considered to be a sufficient criterion for item elimination (Peter, 1979).

Exploratory Factor Analysis. Exploratory factor analysis (EFA) were performed on the original 84-item scale to summarize the data in terms of a set of underlying constructs, and to identify factors with high-intraset correlations. Utilizing the total data set of 1,075 responses (Snow et al., 2005; Dempster, 2007), an EFA was implemented as a basis for item selection.

As the previous two exploratory factor analyses of the ASPA (Snow et al., 2005; Dempster 2007) utilized a PCA with a varimax rotation, the study implemented the same statistical method for the purpose of research consistency. The PCA also provided a more general understanding of the ASPA-SF factor structure, as the analysis sought to transform a number of (possibly) correlated variables into a (smaller) number of uncorrelated variables called principal components. Due to researchers questioning the utilization of PCA in a factor analysis because the two methods are not considered identical (Snook & Gorsuch, 1989), the study also executed a Principal Axis Factoring (PAF) with a promax rotation on the data set. The PAF (i.e., common factor analysis) sought the least number of factors that can account for the common variance (correlation) within the set of variables (Costello & Osborne, 2005). The criteria for retaining factors for rotation were eigenvalues greater than one in this study. In particular, the eigenvalues signified the variance described by each underlying factor in the ASPA. In addition, the proposed study produced a scree-plot—a two dimensional graph with factors on the x-axis and eigenvalues on the y-axis. The scree-plots help denote what factors account for most of the variance and, thus, have the highest eigenvalues in the ASPA.

Item Reliability for ASPA Subscales. Based on the original assignment of the 84 items to the five hypothesized factors, item-total correlations were computed for each of the subscales. To determine this internal consistency reliability, the study evaluated Cronbach's alpha. Cronbach's alpha—a statistic calculated from the pairwise correlations between items—produced a score between zero and one to measure the internal consistency of the ASPA. The study utilized the frequently accepted rule of thumb by George and Mallery (2003) for describing internal consistency through Cronbach's alpha. George and Mallery suggested: $\alpha \geq .9$ as excellent; .9 >

$\alpha \geq .8$ as good; $.8 > \alpha \geq .7$ as acceptable; $.7 > \alpha \geq 6$ as questionable; $.6 > \alpha \geq .5$ as poor; and $.5 > \alpha$ as unacceptable.

Item Reliability for the ASPA Mother and Father Scales. Item-total correlations and alpha coefficients were computed for the total scale. An item-total correlation test was performed to check if any item in the ASPA was inconsistent with the averaged behavior of the others, and thus could be discarded. The analysis sought to decontaminate the original ASPA by eliminating 'unimportant' items prior to determining the factors that represent the construct; i.e., the meaning of the averaged measure. In particular, the researcher wanted to verify that all items were drawn from the domain of patterns of relating. The alpha for the original 84-item instrument was also be examined. Furthermore, the variables with low item-total correlations were examined with those identified through factor analysis and item-total correlations for the subscales. A correlation value less than 0.2 or 0.3 designates that the corresponding item does not correlate very well with the scale overall and, therefore, the item could be dropped (Everitt, 2002; Field, 2005).

Selection of Final Scale Items. The following criteria was used to select the final scale items from the initial set of 84 items: a) high loadings on the factor they represent, b) high item-total correlations on the relevant subscale, and c) high item-total correlations on the total patterns of relating scale. In conclusion, the item selection through an EFA (i.e., both PCA and PAF) produced factors that were uncorrelated through a varimax rotation and correlated through a promax rotation for the purpose of determining or minimizing the dimensionality of the data set and detecting whether any new meaningful underlying variables were present. This research also provided an evaluation of the internal consistency of ASPA and, thus, offered the basis for the creation of the ASPA-SF.

Research Hypothesis 2.

Ho2: There are no statistically meaningful underlying factor structures of patterns of relating as reported on the ASPA-SF in a test tryout.

Ha2: There is at least one statistically meaningful underlying factor structure of patterns of relating as reported on the ASPA-SF in a test tryout.

Utilizing the same 1075 archive responses (Snow et al., 2005; Dempster, 2007) from the first research hypothesis, the study examined the ASPA-SF through a test tryout. Like Research Hypothesis 1, the statistical analyses for Research Hypothesis 2 was an exploratory factor analysis, item reliability analysis on each of the subscales, and item reliability on the total scale. The test tryout provided an evaluation of the internal consistency of ASPA-SF and, thus, offered additional meaning to the instrument by determining whether the theoretical test would practically work.

Exploratory Factor Analysis. A PAF using a promax rotation was employed to evaluate the least number of factors that can account for the common variance (correlation) within the set of variables. Like Research Hypothesis One, the criteria for retaining factors for rotation were eigenvalues greater than one and a scree-plot was offered.

Item Reliability for ASPA-SF Subscales. The study accounted Cronbach's alpha for examining the internal consistency of the ASPA-SF. Similar to Research Hypothesis 1, George and Mallery's (2003) rule of thumb was followed in Research Hypothesis Two. The item reliability was assessed to determine whether the subscales were consistently reflecting the construct their measuring.

Item Reliability for the ASPA-SF Mother and Father Scales. The item-total reliability was examined to ascertain whether the ASPA-SF scale was consistently reflecting the construct

of patterns of relating that item was measuring. Like Research Hypothesis 1, item-total correlations and alpha coefficients were computed for the total scale. The item reliability of the test tryout provided additional verification that all items were drawn from the domain of patterns of relating.

Research Hypothesis 3.

Ho3: There is not a consistent structural model in comparison to the exploratory factor analyses of the ASPA-SF.

Ha3: There is a consistent structural model in comparison to the exploratory factor analyses of the ASPA-SF.

A confirmatory factor analysis (CFA) was implemented with 250 archive participants (Rayner, 2008) to confirm the factor structure identified within the ASPA-SF through the statistical software AMOS. The main benefit of the CFA was the researcher developed a factor model *a priori*, that is, deductive reasoning to theorize the ASPA-SF structure. In addition, the CFA signified the correlated measurement errors and limit loadings or factor correlations to be equal to one another.

In order to identify items that were and were not acceptable, the Modification Indices within AMOS were used to distinguish variables that worsen model fit. The following goodness-of-fit indices were used to assess the degree of fit between the proposed model and the sample data: $\chi 2$, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Standardized Root Mean-Square Residual (RMR), and Room Mean-Square Error of Approximation (RMSEA). The investigation of this research question provided the understanding to whether the ASPA-SF was a theory-testing model that can identify what variables were correlated with specific factors and which factors were correlated.

Research Hypothesis 4.

Ho4: There is no significant relationship between the constructs in the ASPA-SF and the PBI.

Ha4: There is a significant relationship between the constructs of the ASPA-SF and the PBI.

Findings from 250 archive participants (i.e., same population from research hypothesis 3; Rayner, 2008) provided the means to evaluate the concurrent and discriminant validity of the ASPA-SF scales by comparing the scores to the Parental Bonding Instrument (PBI; Parker, Tupling, & Brown, 1979). According to McIntire and Miller (2005), concurrent validity is demonstrated where a test correlates well with a measure that has previously been validated. Furthermore, the authors referenced the two measures may be for the same construct, or for different, but presumably related, constructs. In this proposed study, the PBI and ASPA-SF encompassed the same construct of parental attachment. Discriminant validity was also assessed to determine whether the ASPA-SF is not unduly related to the PBI—i.e., another similar, yet distinct, constructs (Messick, 1989). Correlation coefficients between measures of a construct and measures of conceptually different constructs provided an examination of the ASPA-SF's discriminant validity. If the correlation coefficients are high, this finding indicated a lack of discriminant validity or weak discriminant validity, depending on the theoretical relationship and the magnitude of the coefficient. On the other hand, if the correlations are low to moderate, this demonstrated that the ASPA-SF has discriminant validity. The concurrent and discriminant validity of the ASPA-SF was critical for evaluation because, without sufficient validity, the instrument's test scores have no meaning.

Research Hypothesis 5.

Ho5: The ASPA-SF is not an internally consistent instrument to measure patterns of relating with a prison population.

Ho5: The ASPA-SF is an internally consistent instrument to measure patterns of relating with a prison population.

The objective for this research hypothesis was to determine whether the ASPA-SF could be utilized outside of a undergraduate and graduate student population. While prison participants are not specifically a clinical population, the findings provided the ASPA-SF with groundwork for broadening the instrument's theory testing. Akin to the previous two research hypotheses, the study utilized an exploratory factor analysis. In particular, an EFA was employed through a PAF extraction and a direct oblimin rotation. A scree-plot was also generated to help evaluate the visualization of the ASPA-SF's factor structure with a prison population.

Summary

The study implemented four stages that would utilize the statistical approaches of exploratory factor analysis, item analysis, confirmatory factor analysis, and bivariate correlations. The employment of these methodologies provided the opportunity to explore if the ASPA-SF could be a reliable and valid instrument for assessing patterns of relating. In Chapter IV results of these analyses are reviewed.

CHAPTER FOUR

RESULTS

The purpose of this study was to investigate the subscales and items of the ASPA and determine whether the instrument could be created in to an abbreviated version. In this chapter a description of the results is provided. Specifically, the findings are presented through the stages of a test construction of the ASPA-SF, a test tryout of the ASPA-SF, a confirmatory factor analysis and validity of the ASPA-SF, and an exploratory factor analysis of the ASPA-SF with a prison population.

Stage One: Test Construction of the ASPA-SF

A principle component analysis with a varimax rotation and a principal axis factoring with a promax rotation were employed to analyze the original 84-items on the ASPA with the intention of developing an abbreviated version. Due to the ASPA's evaluation of mother and father caregivers independently, items 1-42 (i.e., pertaining to the mother) and item 43-84 (i.e., evaluating the father) were examined separately. The different factor analyses and rotational methods provided an opportunity to evaluate the items of the ASPA from different theoretical constructs.

Demographics of Participants. Participants were 1,075 undergraduate and graduate students from two universities in the southeastern United States. Upon a critical investigation of the data, a total of 1,050 valid data packets were considered for analysis. The sample included 71% (*n*=743) women and 29% (*n*=307) men ranging in age from 17 to 59 with a mean age of

23.43. The racial demographics indicated 79% (*n*=839) Caucasians, 16% (*n*=165) African-Americans, and 5% (*n*=47) listed "other".

Test Construction of the Mother Portion of the ASPA-SF. The test construction of the mother portion of the ASPA-SF transpired through three analyses. First, the exploratory factor analysis of the mother items of the ASPA was examined. Second, an evaluation of the inter-item correlations of each mother subscale in the ASPA occurred. Lastly, the test construction of the ASPA-SF ensued, as the processes consisted of determining the item selection based on these analyses.

EFA on the Mother Items of the ASPA. Maintaining the original ASPA's factor structure, the analysis extracted five factors with eigenvalues greater than 1.0 that accounted for 49.97% of the cumulative percentage. The initial eigenvalues for each of the components were 10.127, 5.415, 2.447, 1.623, and 1.374, respectively. Table 4.1 presents the rotated sums of squares loadings and percentage of variance explained by each component.

Table 4.1

PCA Rotated Sums of Squares Loadings for Mother Portion of ASPA (N = 1050).

Component	% of Variance Explained	Cumulative % of Variance
1	15.397	15.397
2	11.353	26.971
3	8.352	35.103
4	7.848	42.951
5	7.018	49.968

A summary of the PCA with a varimax rotation and item loadings appears in Table 4.2. The coefficient display format is sorted by size and suppresses small coefficients with an absolute value below .4.

Table 4.2

PCA with Varimax Rotation Matrix on the Mother Items of ASPA

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Var14	.825				
Var13	.794				
Var33	.792				
Var12	.718				
Var34	.701				
Var10	.673				
Var1	.640				
Var15	-.622				
Var3	.517		.423		
Var9	.489	-.469			
Var17		.752			
Var6		.751			
Var5		.723			
Var7		.649			
Var8		.640			
Var20		.561		.437	
Var19		.561			
Var2		.415			
Var18					
Var40			.706		
Var42			.689		
Var30			.633		
Var41			.592		
Var39			-.537	.457	
Var37			.489		
Var38					
Var21				.593	
Var31				.536	
Var36	-.450			.527	
Var22		.461		.497	

Var35			-.420	.494	
Var4				.470	
Var16				.466	
Var26				.441	
Var11				.438	
Var28					.791
Var23					.757
Var24					.636
Var25					.627
Var29					.509
Var32					
Var27					

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 8 iterations.

To illustrate the similarities and differences between extraction and rotation methods, specifically PCA and PAF, a second EFA was conducted using the PAF procedure with a promax rotation that accounted for 43.6% of the cumulative percentage. Table 4.3 displays the extraction sums of squared loadings with the percentage of variance explained by each factor and the cumulative percentage.

Table 4.3

PAF Extraction Sums of Squares Loadings for Mother Portion of ASPA (N = 1050).

Component	% of Variance Explained	Cumulative % of Variance
1	22.945	22.945
2	11.561	34.506
3	4.513	39.019
4	2.543	41.562
5	2.034	43.596

A summary of the PAF is displayed within the pattern matrix that appears in Table 4.4 and the structure matrix that is presented in Table 4.5. Similar to the PCA, the coefficient display format is sorted by size and suppresses small coefficients with an absolute value below .4.

Table 4.4

PAF with Promax Rotation Pattern Matrix on the Mother Items of ASPA

Pattern Matrix[a]

	Factor				
	1	2	3	4	5
Var14	.963				
Var33	.912				
Var13	.776				
Var12	.608				
Var34	.593				
Var1	.542				
Var15	-.529				
Var10	.494				
Var3					
Var21		.762			
Var22		.705			
Var36		.655			
Var16		.605			
Var31		.558			
Var20		.549			
Var11		.543			
Var4		.451			
Var35		.432			
Var19		.422			
Var18					
Var26					
Var6			.868		
Var5			.737		
Var17			.735		
Var7			.521		
Var8			.459		
Var2					
Var9					
Var40				.714	
Var42				.707	
Var30				.607	
Var41				.558	
Var39		.403		-.516	

Var37				.426	
Var38					
Var28					.787
Var23					.711
Var25					.560
Var24					.526
Var29					.412
Var32					
Var27					

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Table 4.5

PAF with Promax Rotation Structure Matrix on the Mother Items of ASPA

Structure Matrix

	Factor				
	1	2	3	4	5
Var14	.865	-.471		.453	
Var13	.851	-.556		.510	
Var33	.832	-.414		.480	
Var34	.720	-.553			
Var12	.716	-.576			
Var1	.654	-.405		.463	
Var10	.650	-.589			
Var15	-.641	.517			
Var22	-.458	.766	.454		
Var36	-.518	.733			
Var21		.689			
Var20		.665	.563		
Var16	-.439	.654			
Var11	-.416	.645			
Var31		.598			
Var9	.471	-.521	-.406		
Var18		.502			
Var35	-.486	.493		-.489	
Var4		.418			

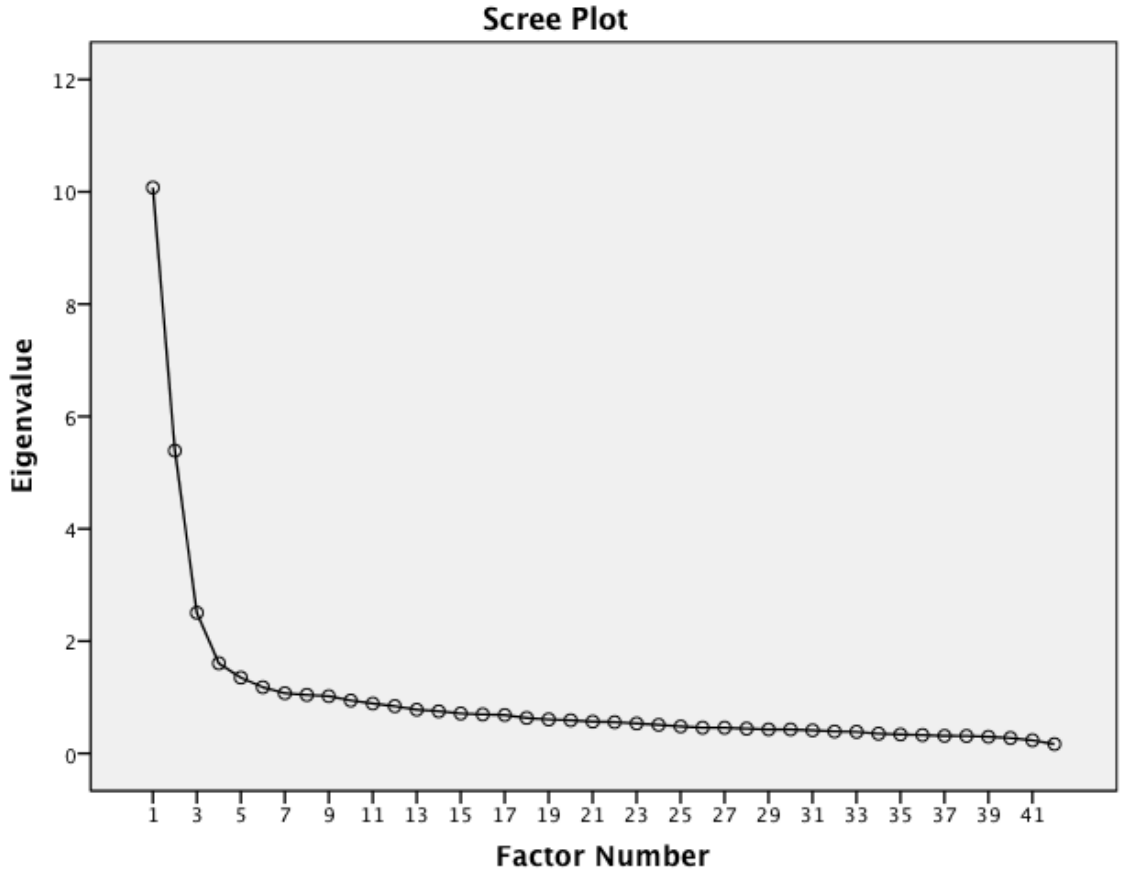
Var6			.768		
Var17			.759		
Var5			.728		
Var7		.410	.579		
Var8		.535	.570		
Var19		.492	.555		
Var41	.528			.680	
Var30	.444			.639	
Var42				.636	
Var3	.581			.615	
Var40				.615	
Var39		.439		-.494	
Var37				.471	
Var2					
Var38					
Var28					.741
Var23					.673
Var25	.420				.606
Var24					.566
Var29				.419	.503
Var27					
Var32					
Var26					

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.

A scree-plot of the mother portion of the ASPA is provided in Figure 4.1.

Figure 4.1

Scree-Plot of Mother Items in the ASPA



Evaluation of Inter-item correlations in the Mother Subscales. Inter-item correlations were examined based upon the previous exploratory factor analyses. Table 4.6 presents the inter-item correlation matrix for the Mother-Safe scale on the ASPA.

Table 4.6

Mother-Safe Inter-item Correlation Matrix

Inter-Item Correlation Matrix

	Var12	Var13	Var14	Var33	Var34	Var1	Var10
Var12	1.000	.690	.599	.547	.528	.488	.670
Var13	.690	1.000	.777	.681	.616	.549	.576
Var14	.599	.777	1.000	.771	.582	.538	.552
Var33	.547	.681	.771	1.000	.631	.510	.484
Var34	.528	.616	.582	.631	1.000	.466	.510
Var1	.488	.549	.538	.510	.466	1.000	.433
Var10	.670	.576	.552	.484	.510	.433	1.000

Table 4.7 displays the inter-item correlation matrix for the Mother-Dependent subscale on the ASPA.

Table 4.7

Mother-Dependent Inter-Item Correlation Matrix

Inter-Item Correlation Matrix

	Var40	Var41	Var42	Var39	Var30	Var3	Var37
Var40	1.000	.397	.397	-.371	.394	.326	.237
Var41	.397	1.000	.492	-.315	.434	.452	.348
Var42	.397	.492	1.000	-.258	.341	.359	.350
Var39	-.371	-.315	-.258	1.000	-.365	-.263	-.119
Var30	.394	.434	.341	-.365	1.000	.398	.243
Var3	.326	.452	.359	-.263	.398	1.000	.315
Var37	.237	.348	.350	-.119	.243	.315	1.000

Table 4.8 presents the inter-item correlation matrix for the Mother-Parentified subscale of the ASPA.

Table 4.8

Mother-Parentified Inter-Item Correlation Matrix

Inter-Item Correlation Matrix

	Var23	Var24	Var25	Var28	Var29
Var23	1.000	.432	.330	.590	.251
Var24	.432	1.000	.303	.409	.244
Var25	.330	.303	1.000	.394	.539
Var28	.590	.409	.394	1.000	.310
Var29	.251	.244	.539	.310	1.000

Table 4.9 presents the inter-item correlation matrix for the Mother-Fearful subscale on the ASPA.

Table 4.9

Mother-Fearful Inter-Item Correlation Matrix

Inter-Item Correlation Matrix

	Var5	Var6	Var7	Var17	Var8	Var19
Var5	1.000	.652	.362	.581	.323	.375
Var6	.652	1.000	.445	.624	.323	.352
Var7	.362	.445	1.000	.384	.579	.292
Var17	.581	.624	.384	1.000	.342	.442
Var8	.323	.323	.579	.342	1.000	.307
Var19	.375	.352	.292	.442	.307	1.000

Table 4.10 displays the inter-item correlation matrix for the Mother-Distant subscale on the ASPA.

Table 4.10

Mother-Distant Inter-Item Correlation Matrix

Inter-Item Correlation Matrix

	Var21	Var22	Var36	Var16	Var31	Var20	Var11	Var4	Var35	Var19
Var21	1.000	.512	.479	.508	.402	.540	.393	.298	.268	.395
Var22	.512	1.000	.522	.493	.388	.537	.627	.256	.375	.363
Var36	.479	.522	1.000	.495	.544	.440	.417	.333	.414	.293
Var16	.508	.493	.495	1.000	.356	.391	.382	.347	.289	.296
Var31	.402	.388	.544	.356	1.000	.363	.301	.276	.323	.254
Var20	.540	.537	.440	.391	.363	1.000	.482	.172	.270	.509
Var11	.393	.627	.417	.382	.301	.482	1.000	.230	.322	.322
Var4	.298	.256	.333	.347	.276	.172	.230	1.000	.239	.143
Var35	.268	.375	.414	.289	.323	.270	.322	.239	1.000	.071
Var19	.395	.363	.293	.296	.254	.509	.322	.143	.071	1.000

Item selections for the Mother portion of the ASPA-SF. After following the item selection procedure outlined previously in Chapter three, two versions of the mother portion of the ASPA-SF were created. The first was a 40-item abbreviated version (i.e., 20-items in regards to mother caregivers), which identified 22 items for removal. The second abbreviated version of the ASPA consisted of 30-items (i.e., 15-items in relation to mother caregivers). Thus, 27 items were identified for removal. The mother items selected for retention in the 40-item version of the ASPA-SF are presented in Table 4.11, while the 22 items not selected for retention appear in Table 4.12.

Table 4.11

40-item ASPA-SF (20 Items Pertaining to Mother Caregivers)

Short Form Item Number	ASPA Item Number	ASPA Scale	Item
1	1	Safe	I had my mother with me when I was upset.
2	5	Fearful	I resented my mother spending time away from me.
3	42	Dependent	I was helpless without my mother.
4	36	Distant	I felt there was something wrong with me because I was distant from my mother.
5	23	Parentified	I put my mother's needs before my own.
6	6	Fearful	I felt abandoned when my mother was away for a few days.
7	13	Safe	I turned to my mother for many things including comfort and reassurance.
8	16	Distant	I wish there was less anger in my relationship with my mother.
9	25	Parentified	I enjoyed taking care of my mother.
10	17	Fearful	I got frustrated when my mother left me alone.
11	41	Dependent	I was never certain about what I should do until I talked to my mother.
12	21	Distant	I often felt angry with my mother without knowing why.
13	14	Safe	I talked things over with my mother.
14	24	Parentified	It was hard for me to get on with my work if my mother had a problem.
15	30	Dependent	I felt it was best to depend on my mother.
16	7	Fearful	I had a terrible fear that my relationship with my mother would end.
17	29	Parentified	It made me feel important to be able to do things for my mother.
18	40	Dependent	I needed my mother to take care of me.
19	31	Distant	I wanted to get close to my mother, but I kept pulling back.
20	33	Safe	I usually discussed my problems and concerns with my mother.

Table 4.12

Items Not Retained for the Mother Portion of the 40-Item ASPA-SF

ASPA Item Number	Item
2	I felt lost when I was upset and my mother was not around.
3	When I was anxious I desperately needed to be close to my mother.
4	I felt relieved when my mother went away for a few days.
8	I was afraid I would lose my mother's love.
9	I was confident my mother would always love me.
10	I was confident my mother would try to understand my feelings.
11	I worried that my mother would let me down
12	When I was upset, I was confident my mother would be there to listen to me.
15	Things had to be really bad for me to ask my mother for help.
18	My mother seemed to notice me only when I was angry.
19	I got furious when I did not get any comfort from my mother.
20	I got really angry at my mother because I thought she could have made more time for me.
22	My mother was always disappointing me.
26	I expected my mother to take care of her problems.
27	I made a fuss over my mother.
28	I sacrificed my own needs for the benefit of my mother.
32	I wanted my mother to rely on me.
34	It was easy for me to be affectionate with my mother.
35	I was so used to doing things on my own that I did not ask my mother.
37	I often felt too dependent on my mother.
38	I wish I could be a child again and be taken care of by my mother.
39	I relied on myself and not my mother to take care of me.

The mother items selected for the 30-item ASPA-SF are presented in Table 4.13.

Table 4.13

30-Item ASPA-SF (15 Items Pertaining to Mother Caregivers)

Short Form Item Number	ASPA Item Number	Scale	Item
1	5	Fearful	I resented my mother spending time away from me.
2	6	Fearful	I felt abandoned when my mother was away for a few days.
3	13	Safe	I turned to my mother for many things including comfort and reassurance.
4	14	Safe	I talked things over with my mother.
5	17	Fearful	I got frustrated when my mother left me alone.
6	21	Distant	I often felt angry with my mother without knowing why.
7	23	Parentified	I put my mother's needs before my own.
8	24	Parentified	It was hard for me to get on with my work if my mother had a problem.
9	28	Parentified	I sacrificed my own needs for the benefit of my mother.
10	30	Dependent	I felt it was best to depend on my mother.
11	31	Distant	I wanted to get close to my mother, but I kept pulling back.
12	33	Safe	I usually discussed my problems and concerns with my mother.
13	36	Distant	I felt there was something wrong with me because I was distant from my mother.
14	40	Dependent	I needed my mother to take care of me.
15	42	Dependent	I was helpless without my mother.

Lastly, the Cronbach's alpha for mother scale of the 40-item ASPA-SF revealed an internal consistency reliability of $\alpha = .724$ and the 30-item ASPA-SF indicated an internal consistency reliability of $\alpha = 0.654$.

Test Construction of the Father Portion of the ASPA-SF. Following the same protocol of the mother portion, the test construction consisted of two exploratory factor analyses, an evaluation of the inter-item correlations, and the selection of what items to retain. The subsequent subsections evaluate the test construction of the father portion of the ASPA-SF.

EFA on the Father Items of the ASPA. Preserving the ASPA's original theoretical factor

foundation, a principal component analysis with a varimax rotation revealed five factors with eigenvalues greater than one for the father items within the ASPA that accounted for 53.93% of the cumulative percentage. The initial eigenvalues for each of the components were 11.689, 5.625, 2.176, 1.661, and 1.502, respectively. Table 4.14 presents the rotated sums of squares loadings and percentage of variance explained by each component.

Table 4.14

Father PCA Rotated Sums of Squares Loadings (N = 1050).

Component	% of Variance Explained	Cumulative % of Variance
1	15.624	15.624
2	11.980	27.604
3	10.242	37.846
4	8.431	46.277
5	7.657	53.934

A summary of the PCA with a varimax rotation and item loadings appears in Table 4.15. The coefficient display format is sorted by size and suppresses small coefficients with an absolute value below .4.

Table 4.15

PCA with Varimax Rotation Matrix on the Father Items of ASPA

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Var56	.827				
Var55	.820				
Var75	.790				
Var54	.752				
Var52	.706				
Var43	.650				
Var76	.650				
Var45	.587				
Var51	.559				
Var83	.462				.454
Var44	.429				
Var48		.793			
Var47		.775			
Var59		.739			
Var49		.660			
Var62		.594	.417		
Var50		.579			
Var61		.553			
Var53		.495	.417		
Var78			.597		
Var63		.451	.576		
Var58			.576		
Var73			.569		
Var77			.563		-.427
Var57	-.424		.531		
Var46			.528		
Var81			.518		-.492
Var68			.513		
Var64		.456	.480		
Var60			.469		
Var70				.855	
Var65				.817	
Var66				.699	

Var67				.604	
Var71				.523	
Var74				.480	
Var69				.414	
Var82					.712
Var84					.613
Var72					.597
Var79					.562
Var80					.424

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 8 iterations.

Similar to the analysis of the mother items, a second EFA was conducted using the PAF procedure with a promax rotation that accounted for 48.08% of the cumulative percentage. Table 4.16 displays the extraction sums of squared loadings and percentage of variance explained by each factor.

Table 4.16

PAF Extraction Sums of Squared Loadings for Father Items of the ASPA

Factor	% of Variance	Cumulative %
1	26.764	26.764
2	12.132	38.896
3	4.113	43.009
4	2.756	45.765
5	2.313	48.078

A summary of the pattern matrix and structure matrix for the PAF appears in Table 4.17 and Table 4.18, respectively. The coefficient display format is sorted by size and suppresses small coefficients with an absolute value below .4.

Table 4.17

PAF with Promax Rotation Pattern Matrix on the Father Items of ASPA

Pattern Matrix[a]

	Factor				
	1	2	3	4	5
Var63	.747				
Var58	.747				
Var78	.724				
Var73	.612				
Var46	.606				
Var64	.593				
Var60	.564				
Var77	.564				
Var53	.509				
Var81	.508				-.466
Var57	.475				
Var62	.415				
Var61	.414				
Var68					
Var56		.983			
Var55		.909			
Var75		.904			
Var54		.736			
Var52		.604			
Var43		.598			
Var45		.533			
Var76		.530			
Var51					
Var44					
Var48			.918		
Var47			.849		
Var59			.719		
Var49			.580		
Var50			.427		
Var70				.915	
Var65				.842	
Var66				.605	
Var67				.518	
Var71				.417	
Var74					
Var69					
Var82					.721
Var72					.579
Var84					.578

Var79					.501
Var83					
Var80					

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Table 4.18

PAF with Promax Rotation Structure Matrix on the Father Items of ASPA

Structure Matrix

	Factor				
	1	2	3	4	5
Var63	.772	-.445	.549		
Var64	.772	-.560	.522		
Var58	.743	-.475	.448		
Var78	.741	-.453	.479		
Var62	.701	-.447	.667		
Var53	.676	-.435	.523		
Var73	.650	-.432	.414		
Var57	.608	-.543			
Var60	.565				
Var77	.536				-.428
Var81	.497				-.455
Var46	.480				
Var68					
Var55	-.559	.893			.462
Var56	-.502	.871			.417
Var75	-.493	.841			.411
Var54	-.615	.823			
Var52	-.615	.742			
Var76	-.597	.727			.412
Var43	-.453	.677			.440
Var45		.608			.566
Var51	-.545	.574	-.405		
Var48			.774		
Var47	.423		.763		
Var59			.721		
Var49	.441		.617		
Var61	.531		.592		
Var50	.527		.584		
Var70				.845	
Var65				.768	
Var66				.660	
Var67		.526		.638	.451

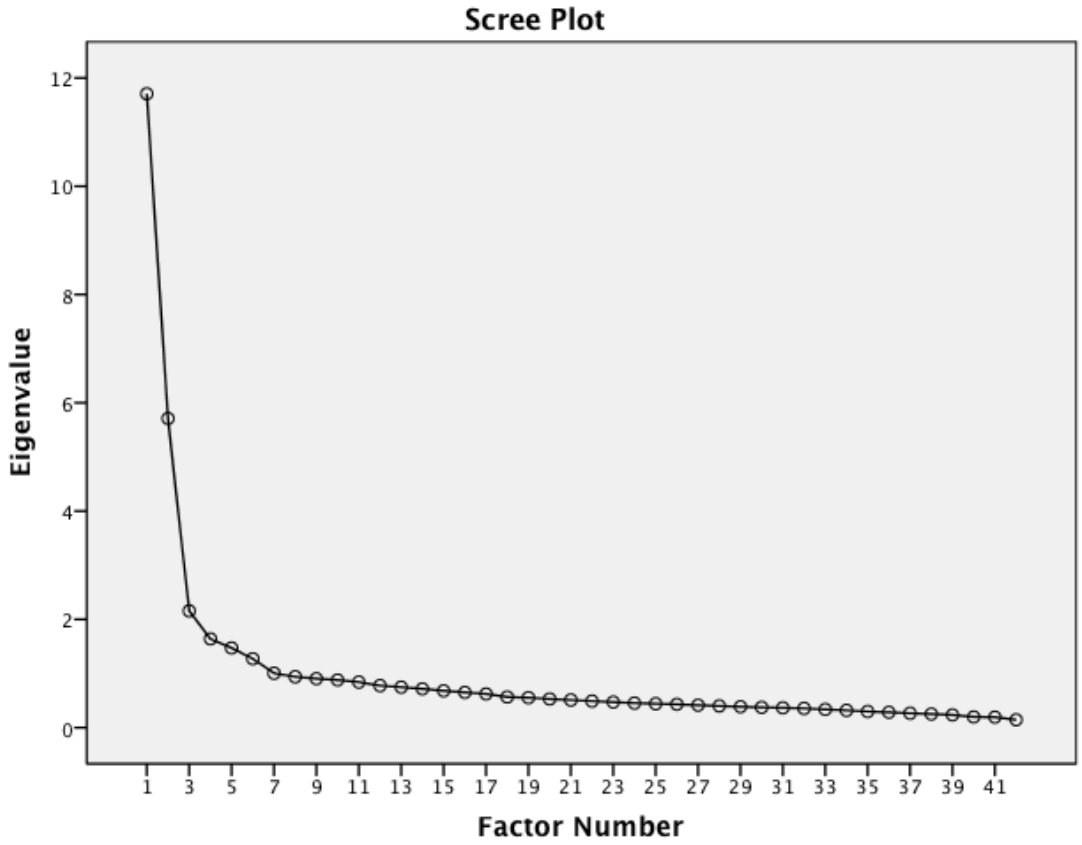
Var71		.482		.580	.477
Var74				.465	
Var69					
Var72		.491			.647
Var82					.628
Var83		.581		.413	.608
Var84					.601
Var79					.508
Var44		.427			.503
Var80					

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.

A scree-plot of the father portion of the ASPA is provided in Figure 4.2.

Figure 4.2

Scree-Plot of Father Items in the ASPA



Evaluation of Inter-item correlations in the Father Subscales. Inter-item correlations were examined based upon the previous exploratory factor analyses. Table 4.19 presents the inter-item correlation matrix for the Father-Safe subscale on the ASPA.

Table 4.19

ASPA Father-Safe Inter-Item Correlation Matrix

Inter-Item Correlation Matrix									
	Var56	Var55	Var54	Var75	Var52	Var43	Var76	Var45	Var51
Var56	1.000	.800	.692	.796	.620	.570	.596	.485	.441
Var55	.800	1.000	.782	.753	.663	.564	.650	.518	.497
Var54	.692	.782	1.000	.668	.721	.542	.601	.430	.558
Var75	.796	.753	.668	1.000	.569	.566	.606	.495	.402
Var52	.620	.663	.721	.569	1.000	.499	.568	.348	.679
Var43	.570	.564	.542	.566	.499	1.000	.525	.489	.411
Var76	.596	.650	.601	.606	.568	.525	1.000	.434	.458
Var45	.485	.518	.430	.495	.348	.489	.434	1.000	.263
Var51	.441	.497	.558	.402	.679	.411	.458	.263	1.000

Table 4.20 displays the inter-item correlation matrix for the Father-Dependent subscale on the ASPA.

Table 4.20

ASPA Father-Dependent Inter-Item Correlation Matrix

Inter-Item Correlation Matrix						
	Var82	Var72	Var84	Var79	Var83	Var80
Var82	1.000	.402	.397	.324	.372	.304
Var72	.402	1.000	.336	.305	.406	.199
Var84	.397	.336	1.000	.326	.439	.268
Var79	.324	.305	.326	1.000	.354	.235
Var83	.372	.406	.439	.354	1.000	.170
Var80	.304	.199	.268	.235	.170	1.000

Table 4.21 presents the inter-item correlation matrix for the Father-Parentified subscale of the ASPA.

Table 4.21

ASPA Father-Parentified Inter-Item Correlation Matrix

Inter-Item Correlation Matrix							
	Var65	Var66	Var67	Var70	Var71	Var74	Var69
Var65	1.000	.518	.462	.687	.373	.310	.253
Var66	.518	1.000	.433	.537	.391	.290	.274
Var67	.462	.433	1.000	.471	.535	.321	.285
Var70	.687	.537	.471	1.000	.458	.370	.362
Var71	.373	.391	.535	.458	1.000	.395	.284
Var74	.310	.290	.321	.370	.395	1.000	.169
Var69	.253	.274	.285	.362	.284	.169	1.000

Table 4.22 presents the inter-item correlation matrix for the Father-Fearful subscale on the ASPA.

Table 4.22

ASPA Father-Fearful Inter-Item Correlation Matrix

Inter-Item Correlation Matrix								
	Var47	Var48	Var59	Var49	Var62	Var50	Var61	Var53
Var47	1.000	.674	.567	.449	.537	.395	.416	.354
Var48	.674	1.000	.615	.456	.413	.348	.411	.296
Var59	.567	.615	1.000	.364	.444	.354	.464	.363
Var49	.449	.456	.364	1.000	.389	.635	.353	.336
Var62	.537	.413	.444	.389	1.000	.412	.501	.521
Var50	.395	.348	.354	.635	.412	1.000	.374	.370
Var61	.416	.411	.464	.353	.501	.374	1.000	.353
Var53	.354	.296	.363	.336	.521	.370	.353	1.000

Table 4.23 displays the inter-item correlation matrix for the Father-Distant subscale on the ASPA.

Table 4.23 ASPA Father-Distant Inter-Item Correlation Matrix

Inter-Item Correlation Matrix												
Var81	.262	.319	.348	.392	.264	.309	.281	.214	.354	.556	.245	1.00
Var46	.343	.371	.307	.356	.253	.261	.224	.386	.336	.257	1.00	.245
Var77	.305	.328	.426	.416	.312	.347	.317	.233	.396	1.00	.257	.556
Var57	.447	.452	.433	.431	.449	.387	.404	.323	1.00	.396	.336	.354
Var60	.474	.415	.392	.397	.339	.321	.403	1.00	.323	.233	.386	.214
Var62	.595	.523	.508	.588	.437	.527	1.00	.403	.404	.317	.224	.281
Var53	.528	.535	.475	.720	.380	1.00	.527	.321	.387	.347	.261	.309
Var73	.489	.477	.593	.410	1.00	.380	.437	.339	.449	.312	.253	.264
Var64	.626	.601	.528	1.00	.410	.720	.588	.397	.431	.416	.356	.392
Var78	.553	.533	1.00	.528	.593	.475	.508	.392	.433	.426	.307	.348
Var58	.631	1.00	.533	.601	.477	.535	.523	.415	.452	.328	.371	.319
Var63	1.00	.631	.553	.626	.489	.528	.595	.474	.447	.305	.343	.262
	Var63	Var58	Var78	Var64	Var73	Var53	Var62	Var60	Var57	Var77	Var46	Var81

Item selections for the father portion of the ASPA-SF. After following the item selection procedure outlined previously, two versions of the ASPA-SF were formulated for the father portion. The first version, the 40-item ASPA-SF, identified 22 items in regards to the father for removal, and thus, resulted in 20 items assessing an individual's early childhood experiences with a father caregiver. Items selected for retention in this version are presented in Table 4.24 while items not selected for retention appear in Table 4.25.

Table 4.24

40-Item ASPA-SF (20 Items Pertaining to Father Caregivers)

Short Form Item Number	ASPA Item Number	ASPA-SF Scale	Item
21	55	Safe	I turned to my father for many things including comfort and reassurance.
22	48	Fearful	I felt abandoned when my father was away for a few days.
23	65	Parentified	I put my father's needs before my own.
24	53	Distant	I worried my father would let me down.
25	79	Dependent	I often felt too dependent on my father.
26	47	Fearful	I resented my father spending time away from me.
27	76	Safe	It was easy for me to be affectionate with my father.
28	58	Distant	I wish there was less anger in my relationship with my father.
29	70	Parentified	I sacrificed my own needs for the benefit of my father.
30	72	Dependent	I felt it was best to depend on my father.
31	59	Fearful	I got frustrated when my father left me alone.
32	66	Parentified	It was hard for me to get on with my work if my father had a problem.
33	56	Safe	I talked things over with my father.
34	63	Distant	I often felt angry with my father without knowing why.
35	82	Dependent	I needed my father to take care of me.
36	49	Fearful	I had a terrible fear that my relationship with my father would end.
37	75	Safe	I usually discussed my problems and concerns with my father.
38	67	Parentified	I enjoyed taking care of my father.
39	78	Distant	I felt there was something wrong with me because I was distant from my father.
40	83	Dependent	I was never certain about what I should do until I talked to my father.

Table 4.25

Items Not Retained for the Father Portion of the 40-Item ASPA-SF

ASPA Item Number	Item
43	I had my father with me when I was upset
44	I felt lost when I was upset and my father was not around.
45	When I was anxious I desperately needed to be close to my father.
46	I felt relieved when my father went away for a few days.
50	I was afraid I would lose my father's love.
51	I was confident my father would always love me.
52	I was confident my father would try to understand my feelings.
54	When I was upset, I was confident my father would be there to listen to me.
57	Things had to be really bad for me to ask my father for help.
60	My father seemed to notice me only when I was angry.
61	I got furious when I did not get any comfort from my father.
62	I got really angry at my father because I thought he could have made more time for me.
64	My father was always disappointing me.
68	I expected my father to take care of his problems
69	I made a fuss over my father.
71	It made me feel important to be able to do things for my father.
73	I wanted to get close to my father, but I kept pulling back.
74	I wanted my father to rely on me.
77	I was so used to doing things on my own that I did not ask my father.
80	I wish I could be a child again and be taken care of by my father.
81	I relied on myself and not my father to take care of me.
84	I was helpless without my father.

The second version, the 30-item ASPA-SF, consisted of 15 items that evaluated the relationship with a father caregiver. Therefore, 27 items were identified for removal in this version. Items selected for retention in the 30-item ASPA-SF are showed in Table 4.26.

Table 4.26

30-Item ASPA-SF (15 Items Pertaining to Father Caregivers)

Short Form Item Number	ASPA Item Number	ASPA-SF Scale	Item
16	47	Fearful	I resented my father spending time away from me.
17	48	Fearful	I felt abandoned when my father was away for a few days.
18	55	Safe	I turned to my father for many things including comfort and reassurance.
19	56	Safe	I talked things over with my father.
20	59	Fearful	I got frustrated when my father left me alone.
21	65	Parentified	I put my father's needs before my own.
22	66	Parentified	It was hard for me to get on with my work if my father had a problem.
23	70	Parentified	I sacrificed my own needs for the benefit of my father.
24	72	Dependent	I felt it was best to depend on my father.
25	75	Safe	I usually discussed my problems and concerns with my father.
26	77	Distant	I was so used to doing things on my own that I did not ask my father.
27	78	Distant	I felt there was something wrong with me because I was distant from my father.
28	81	Distant	I relied on myself and not my father to take care of me.
29	82	Dependent	I needed my father to take care of me.
30	84	Dependent	I was helpless without my father.

Furthermore, the Cronbach's alpha for the proposed 40-item ASPA-SF indicated the father scale had an internal consistency reliability of $\alpha = .728$ and the 30-item ASPA-SF revealed the father scale had an internal consistency of $\alpha = .630$.

Stage Two: Test Tryout of the ASPA-SF

The test tryout of the ASPA-SF utilized the same 1,050 responses from stage one of the test construction. The test tryout of the ASPA-SF provided the initial determination if an abbreviated version could maintain the five-factor structure and the psychometric properties of

the original ASPA.

Test Tryout of the 40-Item ASPA-SF. The test tryout results of the 40-item ASPA-SF assessed the mother and father scales separately. The results of the mother portion of the 40-item ASPA-SF extracted five factors with initial eigenvalues greater than 1.0 that accounted for 62.6 of the cumulative percentage. The initial eigenvalues were 5.272, 3.315, 1.648, 1.261, and 1.025, respectively. Table 4.27 and Table 4.28 display the pattern matrix and structure matrix of the PAF with promax rotation matrix of the mother portion in the 40-item ASPA-SF.

Table 4.27

PAF with Promax Rotation Pattern Matrix on the Mother Portion of 40-Item ASPA-SF

Pattern Matrix[a]

	Factor				
	1	2	3	4	5
Var13	1.001				
Var20	.838				
Var7	.715				
Var1	.456				
Var6		.933			
Var2		.747			
Var10		.683			
Var16		.406			
Var4			.734		
Var12			.718		
Var8			.657		
Var19			.536		
Var18				.706	
Var3				.697	
Var11				.597	
Var15				.553	
Var5					.669
Var9					.632
Var14					.572
Var17					.492

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Table 4.28

PAF with Promax Rotation Structure Matrix on the Mother Portion of 40-Item ASPA-SF

Structure Matrix

	Factor				
	1	2	3	4	5
Var13	.912		-.510	.424	
Var20	.840		-.473	.477	
Var7	.837		-.572	.497	
Var1	.617		-.405	.444	
Var6		.867			
Var2		.755			
Var10		.745			
Var16		.501			
Var4	-.497		.772		
Var12			.680		
Var8			.671		
Var19			.598		
Var11	.521			.702	
Var3				.644	
Var18				.624	
Var15	.425			.617	
Var9					.671
Var5					.583
Var17				.409	.582
Var14					.568

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.

The extraction sums of square loadings for the mother subscales are presented in Table 4.29.

Table 4.29

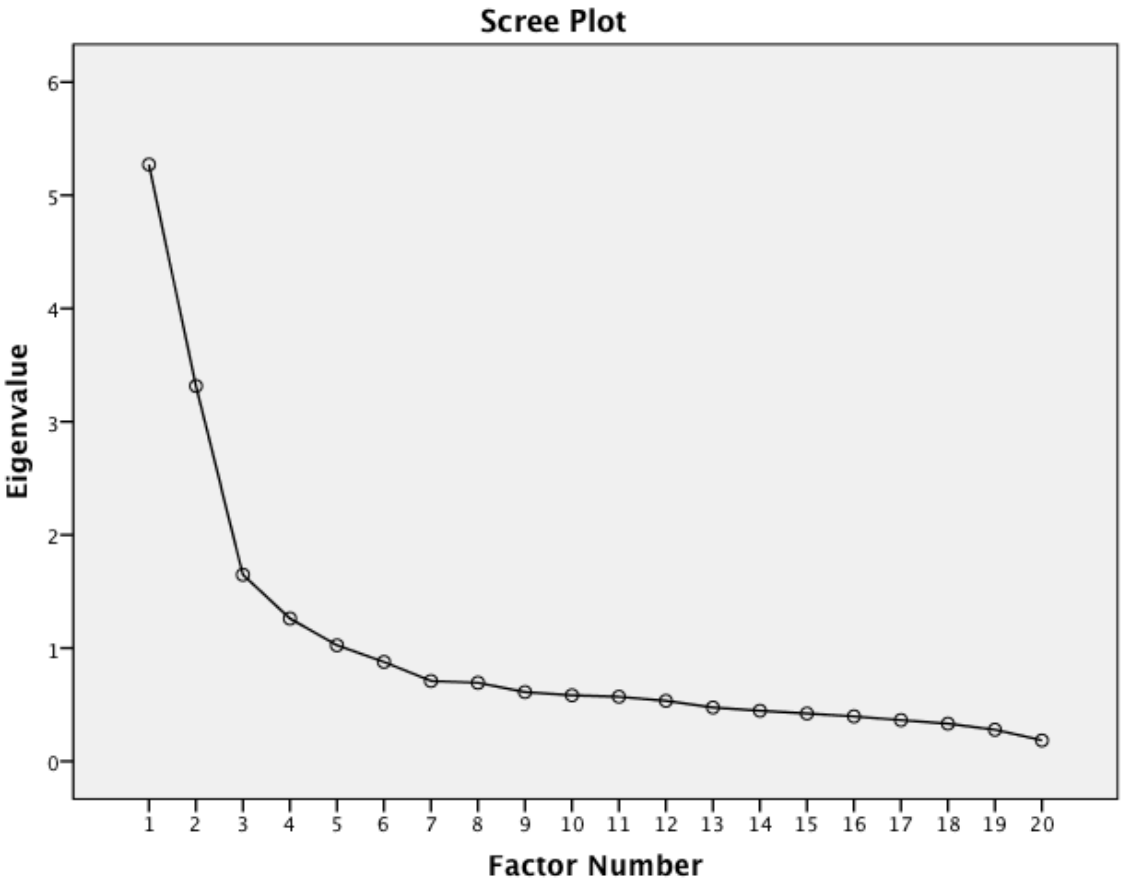
PAF Extraction Sums of Squared Loadings for Mother Portion of the 40-Item ASPA-SF

Factor	% of Variance	Cumulative %
1	24.224	24.224
2	14.208	38.432
3	5.554	43.985
4	3.763	47.749
5	3.063	50.812

Figure 4.3 displays the scree-plot of the mother portion of the 40-item ASPA-SF.

Figure 4.3

Scree-Plot of Mother Items of the 40-Item ASPA-SF



The test tryout results of the father portion of the 40-item ASPA-SF extracted five factors with initial eigenvalues greater than 1.0 that accounted for 67.15 of the cumulative percentage. The initial eigenvalues were 6.144, 3.312 1.704, 1.238, and 1.032, respectively. Table 4.30 and Table 4.31 display the pattern matrix and structure matrix for the PAF with a promax rotation of the father portion of the 40-item ASPA-SF.

Table 4.30

PAF with Promax Rotation Pattern Matrix on the Father Portion of 40-Item ASPA-SF

Pattern Matrix[a]

	Factor				
	1	2	3	4	5
Var33	.982				
Var37	.944				
Var21	.830				
Var27	.509				
Var28		.829			
Var34		.780			
Var39		.661			
Var24		.628			
Var22			.922		
Var26			.791		
Var31			.639		
Var36			.413		
Var23				.885	
Var29				.871	
Var32				.610	
Var38				.467	
Var35					.722
Var30					.572
Var25					.543
Var40					.401

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Table 4.31

PAF with Promax Rotation Structure Matrix on the Father Portion of 40-Item ASPA-SF

Structure Matrix

	Factor				
	1	2	3	4	5
Var33	.902	-.506			.468
Var37	.880	-.488			.462
Var21	.876	-.559			.503
Var27	.696	-.574			.417
Var34	-.422	.783	.436		
Var28	-.449	.782			
Var39	-.429	.704			
Var24	-.402	.693	.411		
Var22			.869		
Var26		.418	.789		
Var31		.415	.717		
Var36		.451	.538		
Var29				.825	
Var23				.816	
Var32				.663	
Var38	.507	-.409		.614	.463
Var30	.470				.647
Var40	.603			.413	.629
Var35					.618
Var25					.532

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.

The extraction sums of square loadings for the mother subscales are presented in Table 4.32.

Table 4.32

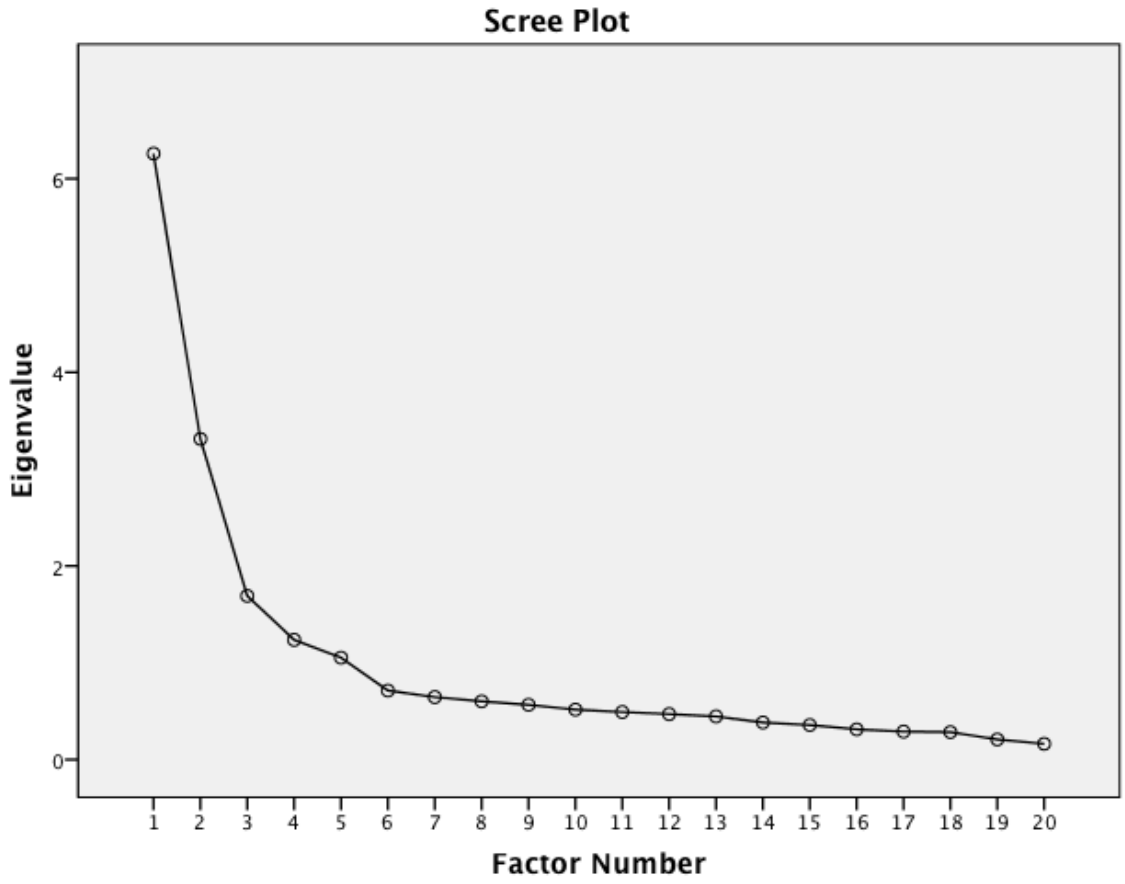
PAF Extraction Sums of Squared Loadings for Father Portion of the 40-Item ASPA-SF

Factor	% of Variance	Cumulative %
1	28.797	28.797
2	14.394	43.192
3	6.747	49.938
4	3.673	53.612
5	3.347	56.958

Figure 4.4 displays the scree-plot of the mother portion of the 40-item ASPA-SF.

Figure 4.4

Scree-Plot of Father Items of the 40-Item ASPA-SF



The Cronbach's alpha, mean scores, and standard deviations for the 40-item version of the ASPA-SF is presented in Table 4.33.

Table 4.33

ASPA-SF Means and Standard Deviations

Mother	α	Mean	SD	Father	α	Mean	SD
Factor				Factor			
Safe	.88	15.01	3.80	Safe	.90	11.77	4.58
Dependent	.73	10.50	3.29	Dependent	.69	9.49	3.28
Parentified	.68	11.97	2.98	Parentified	.81	9.52	3.50
Fearful	.81	6.17	2.72	Fearful	.81	6.63	3.24
Distant	.77	7.13	3.26	Distant	.83	7.86	4.00

Test Tryout of the 30-Item ASPA-SF. The test tryout results of the 30-item assessed the mother and father scales separately. The mother subscales of the ASPA-SF extracted four factors with eigenvalues greater than 1.0 and accounted for 64.153 of the cumulative percentage. The eigenvalues were 3.838, 2.796, 1.810, and 1.179. While only four factors had over a 1.0 eigenvalue, a fifth factor had an eigenvalue of .932 and contributed to the cumulative percentage being raised to 70.363. Table 4.34 displays the PAF with a promax rotation pattern matrix of the mother portion of the 30-item abbreviated instrument. As noted previously, a four-factor model does not support the theoretical premise of the original ASPA, and thus, the mother portion of the 30-item ASPA-SF version could not be verified.

Table 4.34

PAF with Promax Rotation Pattern Matrix on the Mother Portion of 30-Item ASPA-SF

Pattern Matrix[a]

	Factor			
	1	2	3	4
Var4	.833			
Var3	.783			
Var12	.727			
Var13	-.653			
Var11	-.602			
Var6	-.490			
Var2		.849		
Var1		.774		
Var5		.749		
Var7			.814	
Var9			.735	
Var8			.547	
Var14				.741
Var15				.600
Var10				.563

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Similar to the mother portion, the test tryout results of the father portion of the 30-item ASPA-SF extracted four factors with eigenvalues greater than 1.0. These factors accounted for 65.945 of the cumulative percentage. The eigenvalues were 4.290, 2.579, 1.741, and 1.283. Akin to the mother portion, one factor fell at .963, and if included would contribute to the cumulative percentage being raised to 72.366. Table 4.35 presents the PAF with a promax rotation pattern matrix of the father portion in the 30-item ASPA-SF. As previously referenced with the mother portion of the 30-item, a four-factor model does not support the theoretical foundation of the original ASPA. Therefore, a 30-item ASPA-SF cannot be validated and the exploration of this version was concluded in the study.

Table 4.35

PAF with Promax Rotation Pattern Matrix on the Father Portion of 30-Item ASPA-SF

Pattern Matrix[a]

	Factor			
	1	2	3	4
Var19	.971			
Var27	.875			
Var18	.834			
Var17		.840		
Var16		.786		
Var20		.745		
Var26				
Var23			.876	
Var21			.784	
Var22			.609	
Var28				-.769
Var25				-.645
Var29				.509
Var24				.481
Var30				.443

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Stage Three: Confirmatory Factor Analysis and Validity

The third stage consisted of a confirmatory factor analysis and an evaluation of the validity of the 40-item abbreviated version of the ASPA to the PBI. These analyses provided an examination of whether the structural model and constructs were reliable and valid in the ASPA-

SF.

Demographics of Participants. Participants were 250 undergraduate students enrolled at a university in the southeastern United States. The sample included 53.6% (*n*=134) female and 46.4% (*n*=116) male. The mean age was 20.36. The racial demographics were 86% Caucasian (*n*=215), 7.6% (*n*=19) African-American, 2.4% (*n*=6) Asian, 1.6% (*n*=4) Hispanic, .4% Native American (*n*=1), and 2% (*n*=5) listed "other".

ASPA-SF Confirmatory Factor Analysis. To further explore and cross validate the five factor structure of the ASPA-SF, a CFA was undertaken on data from the 250 participants not selected for use in the EFA using AMOS 6.1. Utilizing AMOS, the estimation was set on a discrepancy of maximum likelihood. For the purpose of computing fit measures with incomplete data, the program was set on fit the saturated and independence models. In doing so, AMOS was able to analyze the structural model of the ASPA-SF, which was developed through the test construction and test tryout. The results showed that fit indices for the mother items indicated a fit between the model and the data, where $\chi 2$ (*df* = 160) = 274.46, CMIN/DF = 1.715, CFI = .93, TLI = .91, RMR = .07, and RMSEA = .05. Figure 4.5 presents the standardized estimates of the five-factor solution and item loadings and Table 4.36 displays the standardized residual covariances of the mother items in the ASPA-SF. These factors were labeled, as on the original ASPA: Factor 1, Mother-Safe; Factor 2, Mother-Dependent; Factor 3, Mother-Parentified, Factor 4, Mother-Fearful; and Factor 5, Mother-Distant.

Figure 4.5

CFA Standardized Estimates of the Mother ASPA-SF

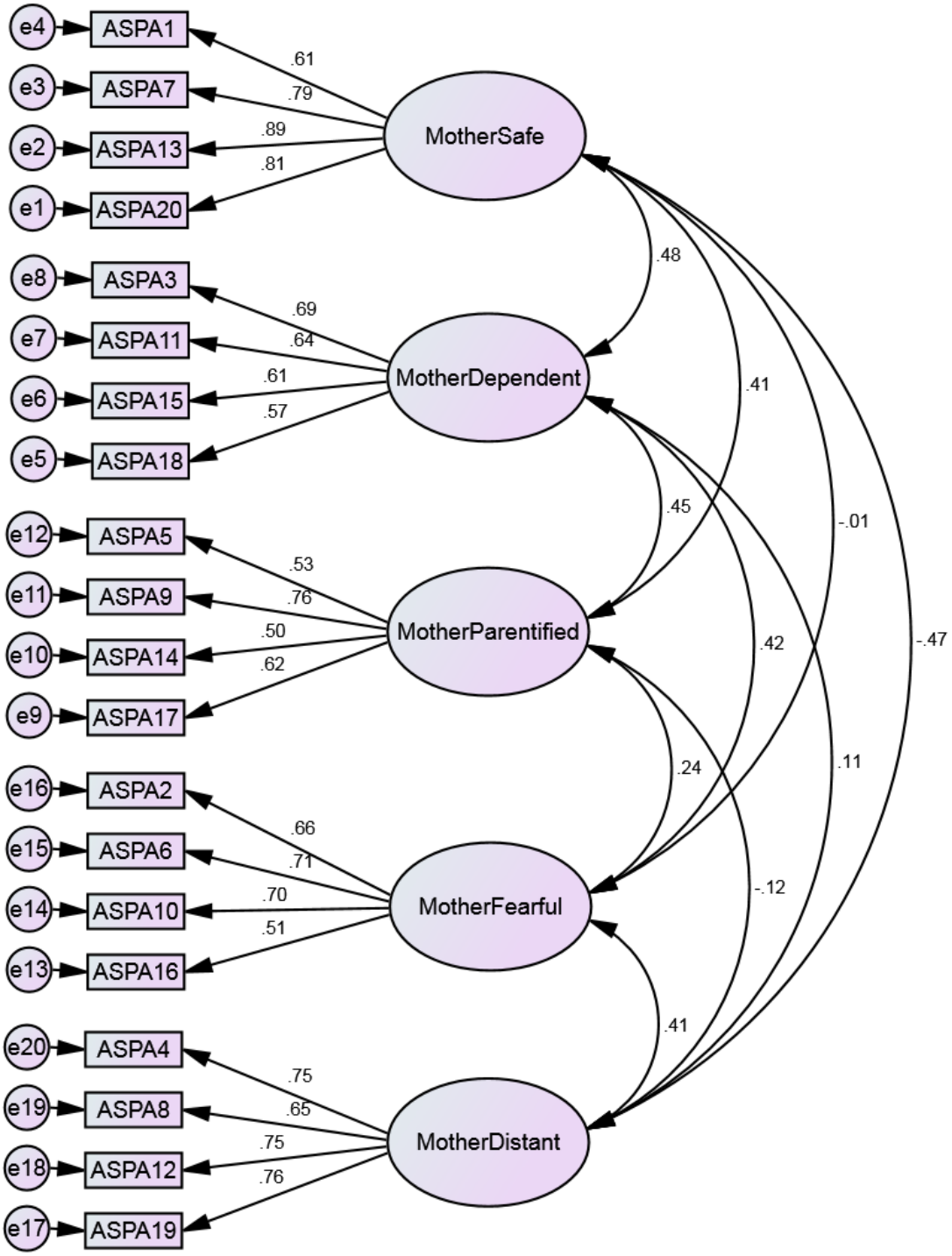


Table 4.36

Standardized Residual Covariances for Mother Items of ASPA-SF

	ASPA4	ASPA8	ASPA12	ASPA19	ASPA2	ASPA6	ASPA10	ASPA16
ASPA20								
ASPA13								
ASPA7								
ASPA1								
ASPA18								
ASPA15								
ASPA11								
ASPA3								
ASPA14								
ASPA17								
ASPA9								
ASPA5								
ASPA16								
ASPA10								
ASPA6								
ASPA2								
ASPA19								
ASPA12								
ASPA8								
ASPA4	.000	-.120	-.079	.245	-.859	-.829	1.682	2.917

ASPA20										
ASPA13										
ASPA7										.000
ASPA1									.000	.707
ASPA18								.000	.384	-.566
ASPA15							.000	1.901	.896	.792
ASPA11						.000	-1.083	-.603	.149	1.440
ASPA3					.000	.339	-.317	.047	-1.354	-1.586
ASPA17				.000	.467	.172	-.550	-.630	.457	-1.054
ASPA14			.000	-.683	1.313	1.025	-2.159	-1.311	.044	-1.494
ASPA9		.000	-.304	.198	.547	1.064	-.751	-.072	.272	-.499
ASPA5	.000	-.391	2.094	-.021	.268	1.366	-1.944	-2.243	-1.648	-1.603
ASPA16	.871	-.357	1.656	-2.144	.822	-1.299	-.585	-.835	-.573	-1.832
ASPA10	-.837	-2.117	1.078	-.756	.629	-1.764	-.745	-2.454	-1.471	-1.143
ASPA6	1.301	.385	2.435	.402	1.605	.524	.352	-.026	1.424	1.818
ASPA2	-.524	-.067	.808	1.405	1.154	.604	.143	-.547	.836	1.580
ASPA19	-.326	-.879	1.606	-.034	2.183	-1.257	1.144	.719	1.284	-.462
ASPA12	.909	-1.220	1.819	.462	.236	-1.963	.173	-.516	.465	.139
ASPA8	-.955	-.811	.225	-1.334	.488	-2.338	.243	-1.699	-.603	.462
ASPA4	1.167	.242	2.333	.118	.961	-1.412	.331	.753	.027	.289
	ASPA5	ASPA9	ASPA14	ASPA17	ASPA3	ASPA11	ASPA15	ASPA18	ASPA1	ASPA7

ASPA4	.761	.433
ASPA8	.014	-.666
ASPA12	-.447	-.245
ASPA19	-.158	-.781
ASPA2	.673	1.258
ASPA6	1.406	1.573
ASPA10	-1.845	-1.549
ASPA16	-1.627	-2.509
ASPA5	-.887	-1.128
ASPA9	1.329	.767
ASPA14	-1.161	-1.078
ASPA17	.502	1.237
ASPA3	-1.804	-1.151
ASPA11	2.077	2.545
ASPA15	.095	.319
ASPA18	-.634	-.107
ASPA1	-.442	.342
ASPA7	.189	-.424
ASPA13	.000	-.002
ASPA20		.000

A confirmatory factor analysis of the father portion of the ASPA-SF indicated a fit between the model and the data, where $\chi 2$ (*df* = 160) = 395.72, CMIN/DF = 2.47, CFI = .90, TLI = .90, RMR = .10, and RMSEA = .07. Figure 4.6 presents the standardized estimates of the five-factor solution and item loadings and Table 4.37 displays the standardized residual covariances of the father ASPA-SF. Similar to the mother items, these factors were labeled identical of those on the original ASPA: Factor 1, Father-Safe; Factor 2, Father-Dependent; Factor 3, Father-Parentified, Factor 4, Father-Fearful; and Factor 5, Father-Distant.

Figure 4.6

CFA Standardized Estimates of the Father ASPA-SF

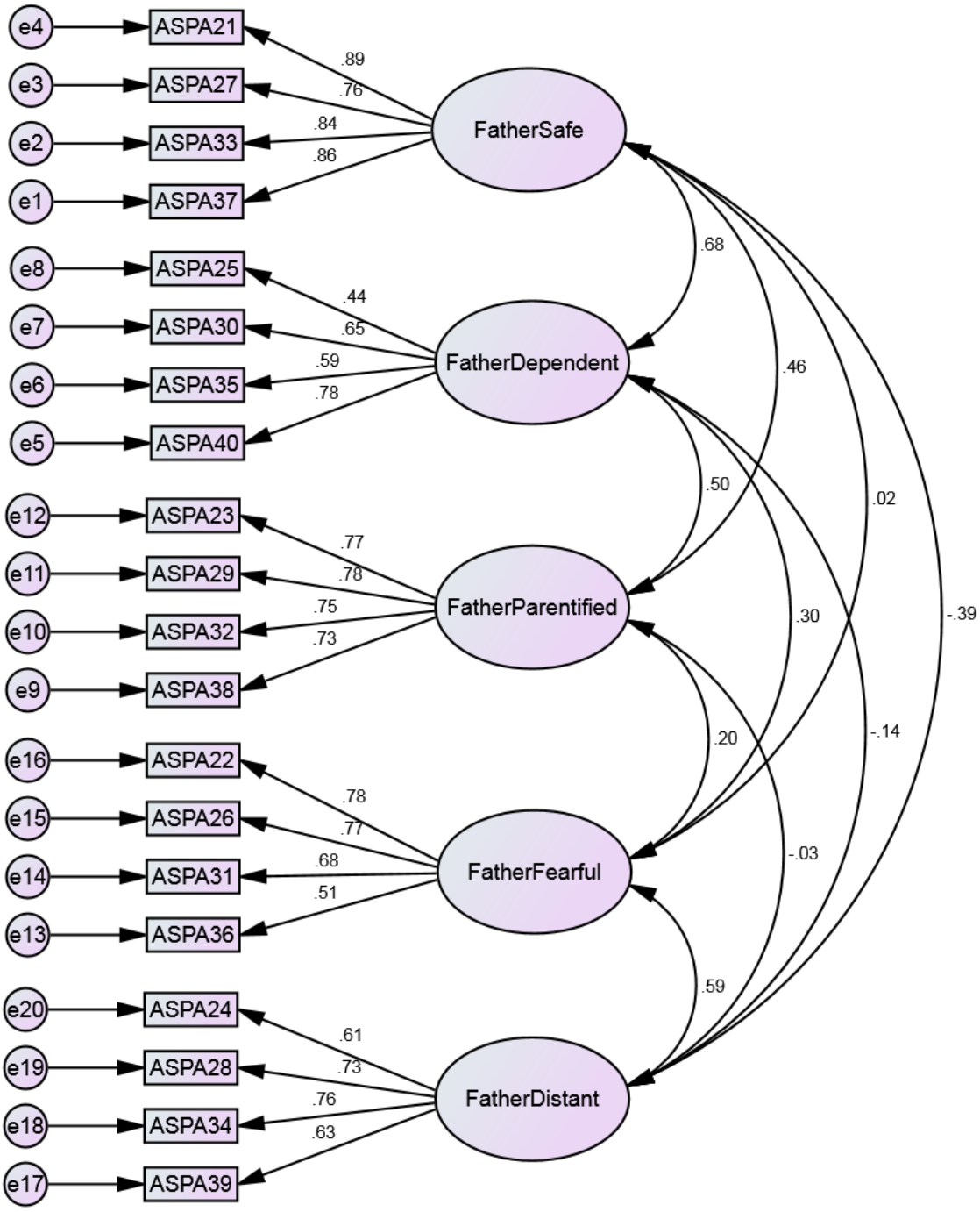


Table 4.37

Standardized Residual Covariances for Father Items of ASPA-SF

	ASPA24	ASPA28	ASPA34	ASPA39	ASPA22	ASPA26	ASPA31	ASPA36	ASPA23
ASPA37									.000
ASPA33								.000	.946
ASPA27							.000	-.331	-.413
ASPA21						.000	.022	-1.253	-2.754
ASPA40					.000	.727	-.150	-.456	.188
ASPA35				.000	-1.025	-.811	.019	1.831	1.161
ASPA30			.000	.840	-.347	.811	-.253	3.682	-.795
ASPA25		.000	-.280	-.202	-1.975	-.968	.843	3.245	-1.005
ASPA32	.000	.973	-.486	-1.081	-.793	-.907	.909	4.276	.174
ASPA38									
ASPA29									
ASPA23									
ASPA36									
ASPA31									
ASPA26									
ASPA22									
ASPA39									
ASPA34									
ASPA28									
ASPA24									

ASPA37										
ASPA33										.000
ASPA27									.000	-.418
ASPA21								.000	.286	.105
ASPA40							.000	-.286	-.631	.262
ASPA35						.000	.176	-1.399	-.175	-1.336
ASPA30					.000	1.482	-.516	.947	.378	.260
ASPA25				.000	-1.120	-.725	.383	-.821	-.916	.244
ASPA38			.000	.983	1.348	1.124	1.583	1.179	2.290	.934
ASPA32		.000	-.081	1.490	-.826	-.112	1.338	-.941	-.341	-.306
ASPA29	.000	-.186	-.084	-1.044	-.420	-1.402	-.110	-.769	-1.243	-.737
ASPA23	.502	.029	-.290	.313	-.874	-1.478	-1.372	-.106	-.168	-.429
ASPA36	1.229	2.222	-1.432	2.311	-.851	-1.633	.050	-.785	-1.676	.211
ASPA31	.828	2.721	-.082	3.518	-.933	-.191	-.408	1.000	-.492	.974
ASPA26	-1.411	-.060	-2.251	2.292	-.935	-.300	-.200	-.328	-1.093	-.191
ASPA22	.606	2.309	.038	2.537	-.264	-.081	-.064	.849	.164	.541
ASPA39	1.787	1.898	-.144	4.125	-.893	.600	.592	-.905	-1.637	.361
ASPA34	1.143	.298	-.901	2.872	-.394	.047	1.960	.409	-.926	1.324
ASPA28	-.524	-.193	-2.610	1.955	-1.804	-1.373	-.754	-.512	-2.209	.353
ASPA24	.628	1.722	-.866	.306	-1.945	-3.121	-.878	-.544	-1.326	1.026
	ASPA29	ASPA32	ASPA38	ASPA25	ASPA30	ASPA35	ASPA40	ASPA21	ASPA27	ASPA33

	ASPA24	ASPA28	ASPA34	ASPA39	ASPA22	ASPA26	ASPA31	ASPA36	ASPA23	ASPA29	ASPA32	ASPA38	ASPA25	ASPA30	ASPA35	ASPA40	ASPA21	ASPA27	ASPA33	ASPA37
ASPA37	.382	.130	.977	.495	-.504	-.588	.201	-.392	.240	-.777	1.234	1.147	.182	.517	-.670	1.216	-.194	-.194	.274	.000

Validity of the ASPA-SF to the PBI. The ASPA-SF was analyzed to evaluate the validity of the instrument to the original two-factor PBI model (Parker, Tupling, & Brown, 1979) and Kendler's (1996) three-factor model of the PBI. The results of the analyses are provided below.

Correlations to the Original PBI Model. Table 4.38 displays the correlations between the mother subscales on the ASPA-SF to the mother subscales on the 2-factor version of the PBI.

Table 4.38

Correlation Matrix of ASPA-SF Mother subscales and PBI Mother subscales

		MS	MD	MP	MF	MA
MCare	Pearson Correlation	.235**	-.046	.080	.049	-.034
	Sig. (2-tailed)	.000	.479	.223	.457	.600
	N	235	235	235	235	235
MOverpro	Pearson Correlation	-.385**	-.036	-.077	.264**	.551**
	Sig. (2-tailed)	.000	.584	.236	.000	.000
	N	236	236	236	236	236

**Correlation is significant at the .01 level (2-tailed).

Likewise, Table 4.39 presents the correlations between the father subscales on the ASPA-SF to the father subscales on the 2-factor version of the PBI.

Table 4.39

Correlation Matrix of ASPA-SF Father subscales and PBI Father subscales

		MS	MD	MP	MF	MA
MWarmth	Pearson Correlation	.468**	.085	.179**	-.036	-.284**
	Sig. (2-tailed)	.000	.194	.006	.585	.000
	N	235	235	235	235	235
MProtectiveness	Pearson Correlation	-.135*	.194**	.110	.168**	.303**
	Sig. (2-tailed)	.038	.003	.091	.010	.000
	N	236	236	236	236	236
MAuthoritarianism	Pearson Correlation	-.414**	-.213**	-.160*	.253**	.527**
	Sig. (2-tailed)	.000	.001	.014	.000	.000
	N	237	237	237	237	237

**Correlation is significant at the .01 level (2-tailed).
* Correlation is significant at the .05 level (2-tailed).

Correlations to Kendler's PBI Model. In terms of the Kendler's (1996) PBI model (i.e., 3-factor structure), Table 4.40 displays the correlations between the mother subscales of the ASPA-SF to that PBI model.

Table 4.40

Correlation Matrix of ASPA-SF Mother subscales and Kendler's PBI Mother subscales

		FS	FD	FP	FF	FA
FCare	Pearson Correlation	.477**	.253**	.208**	.115	-.155*
	Sig. (2-tailed)	.000	.000	.001	.081	.019
	N	231	231	231	231	231
FOverpro	Pearson Correlation	-.027	.115	.056	.347**	.296**
	Sig. (2-tailed)	.681	.080	.399	.000	.000
	N	232	232	232	232	232

**Correlation is significant at the .01 level (2-tailed).
*Correlation is significant at the .05 level (2-tailed).

Likewise, the father subscales of ASPA-SF were evaluated to Kendler's 3-factor model of the PBI and are presented in Table 4.41.

Table 4.41

Correlation Matrix of ASPA-SF Father subscales and Kendler's PBI Father subscales

		FS	FD	FP	FF	FA
FWarmth	Pearson Correlation	.687**	.363**	.340**	-.040	-.361**
	Sig. (2-tailed)	.000	.000	.000	.544	.000
	N	232	232	232	232	232
FProtectiveness	Pearson Correlation	.065	.228**	.203**	.225**	.163*
	Sig. (2-tailed)	.319	.000	.002	.001	.013
	N	234	234	234	234	234
FAuthoritarianism	Pearson Correlation	-.065	-.009	-.088	.283**	.229**
	Sig. (2-tailed)	.318	.891	.179	.000	.000
	N	237	237	237	237	237

**Correlation is significant at the .01 level (2-tailed).
*Correlation is significant at the .05 level (2-tailed).

Stage Four: EFA on Prison Population

To evaluate the factor structure of the ASPA-SF with a specific population group, the study evaluated the archive responses from a prison population. The demographics of the participants and the results of the EFA are listed below.

Demographics of Participants. The total number of participants was 251 inmates at two midsize prisons in Mississippi and Tennessee. The sample included 222 usable responses with 64% (*n*=143) male and 35.4% (*n*=79) female. The racial demographics of the participants showed 39.64% (*n*=88) were Caucasian/White, 57.21% (*n*=127) were African American, .45%

(*n*=1) were Hispanic, .45% (*n*=1) were American Indian, .90% (*n*=2) were Dominican, and 1.351% (*n*=3) listed "other".

EFA of Mother Items on a Prison Population. The exploratory factor analysis extracted four factors with eigenvalues greater than 1.0 that accounted for 57.36% of the cumulative percentage. The initial eigenvalues for each of the factors were 5.070, 3.448, 1.715, and 1.239, respectively. One factor did account for an initial eigenvalue of .953 and, if included, would raise the cumulative percentage to 62.123. Table 4.42 presents the extracted sums of squares loadings and percentage of variance explained by each factor.

Table 4.42

PAF Extraction Sums of Squared Loadings for Mother Items with Prison Participants

Factor	% of Variance	Cumulative %
1	23.081	23.081
2	14.570	37.651
3	5.644	43.295
4	3.715	47.010

A summary of the PAF with a direct oblimin rotation pattern matrix and structure matrix appears in Table 4.43 and Table 4.44, respectively. The coefficient display format is sorted by size and suppresses small coefficients with an absolute value below .4.

Table 4.43

PAF with Direct Oblimin Rotation Pattern Matrix on the Mother Items with Prison Participants

Pattern Matrix[a]

	Factor			
	1	2	3	4
ASPA4	.832			
ASPA7	-.670			
ASPA12	.610			
ASPA13	-.599			
ASPA8	.583			
ASPA20	-.524			
ASPA19	.495			
ASPA1	-.418			
ASPA11		.696		
ASPA3		.637		
ASPA15		.550		
ASPA18		.491		
ASPA9			.695	
ASPA17			.622	
ASPA5			.613	
ASPA14			.437	
ASPA6				-.784
ASPA10				-.689
ASPA2				-.617
ASPA16				-.424

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 8 iterations.

Table 4.44

PAF with Direct Oblimin Rotation Structure Matrix on the Mother Items with Prison Participants

Structure Matrix

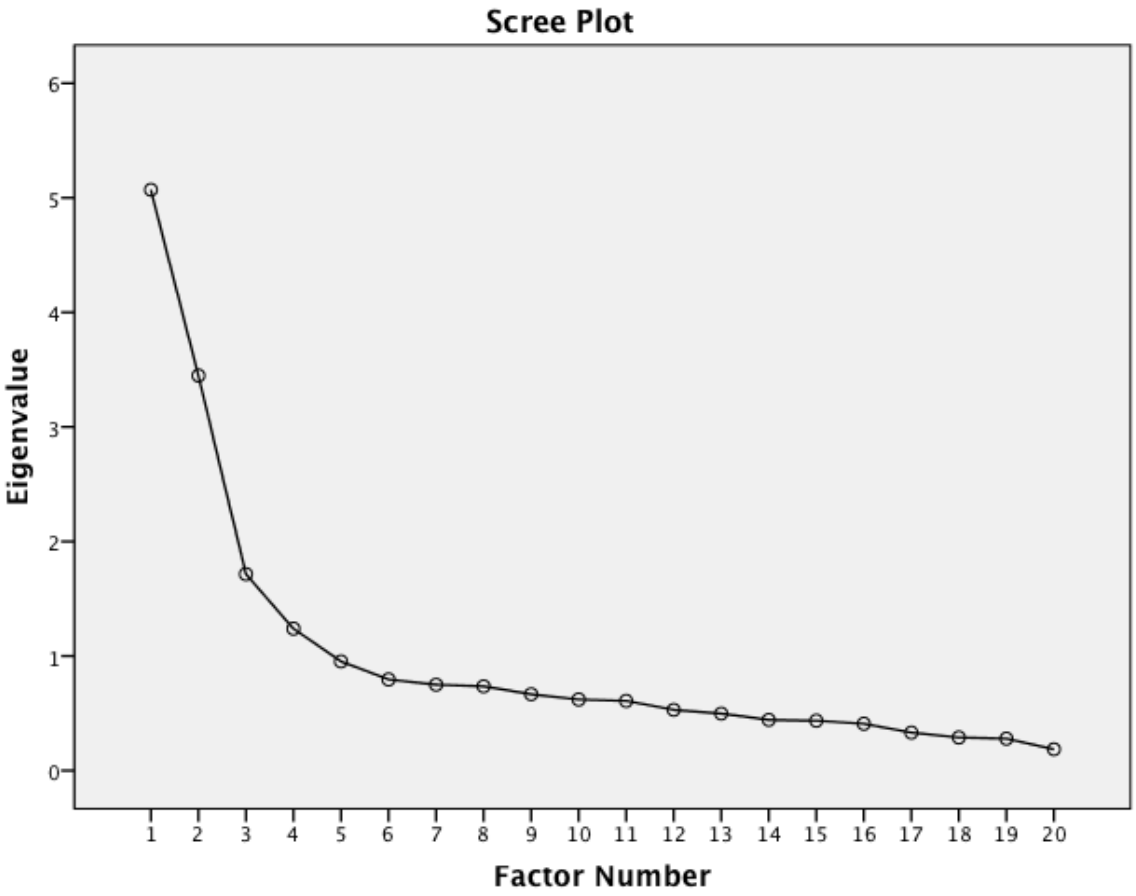
	Factor			
	1	2	3	4
ASPA4	.802			-.433
ASPA7	-.718	.446		
ASPA13	-.684		.498	
ASPA12	.660			-.444
ASPA20	-.628	.465	.441	
ASPA8	.608			-.438
ASPA19	.522			
ASPA1	-.508			
ASPA11		.692		
ASPA3		.658		
ASPA15		.537		
ASPA18		.477		
ASPA9			.701	
ASPA17			.697	
ASPA5			.553	
ASPA14			.463	
ASPA6				-.760
ASPA10				-.708
ASPA2				-.620
ASPA16	.422			-.560

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

A scree-plot of the EFA on the ASPA-SF mother items with the prison population is provided in Figure 4.7.

Figure 4.7

Scree-Plot of ASPA-SF Mother Items with Prison Population



The data was also evaluated when extracting based on a fixed number of five factors (i.e., the theoretically structure of the ASPA-SF). Table 4.45 and Table 4.46 display the pattern and structure matrices based on restricting the data to a five-factor model.

Table 4.45

Pattern Matrix for Mother Five-Factor Model with Prison Participants

Pattern Matrix[a]

	Factor				
	1	2	3	4	5
ASPA13	-.764				
ASPA20	-.704				
ASPA7	-.677				
ASPA12	.520				
ASPA8					
ASPA3		.693			
ASPA11		.646			
ASPA18		.499			
ASPA15		.458			
ASPA9			.656		
ASPA17			.627		
ASPA5			.572		
ASPA14			.490		
ASPA6				-.794	
ASPA10				-.684	
ASPA2				-.635	
ASPA16				-.438	
ASPA19					.572
ASPA4	.409				.563
ASPA1					

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 15 iterations.

Table 4.46

Structure Matrix for Mother Five-Factor Model with Prison Participants

Structure Matrix

	Factor				
	1	2	3	4	5
ASPA13	-.829		.411		
ASPA7	-.791				
ASPA20	-.784				
ASPA12	.589			-.450	.447
ASPA1	-.463				-.442
ASPA3		.703			
ASPA11		.657			
ASPA18		.509			
ASPA15		.506			
ASPA17			.697		
ASPA9			.675		
ASPA5			.551		
ASPA14			.507		
ASPA6				-.760	
ASPA10				-.706	
ASPA2				-.626	
ASPA16				-.560	
ASPA4	.607			-.444	.751
ASPA19					.649
ASPA8	.473			-.442	.480

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

The internal consistency of the mother scale of the ASPA-SF with the prison population indicated an $\alpha = .720$. The Cronbach's alpha for the five factors on the 4-item mother subscales were: Mother-Safe = .85, Mother-Dependent = .65, Mother-Parentified = .66, Mother-Fearful = .75, and Mother-Distant = .76. The means of the subscales were: Mother-Safe = 13.90, Mother-Dependent = 9.52, Mother-Parentified = 13.73, Mother-Fearful = 7.03, and Mother-Distant = 8.00.

EFA of Father Items on a Prison Population. The analysis extracted four factors with eigenvalues greater than 1.0 that accounted for 64.84% of the cumulative percentage on the

father items with prison participants. The initial eigenvalues for each of the factors were 6.553, 3.843, 1.412, and 1.158, respectively. Table 4.47 presents the extracted sums of squares loadings and percentage of variance explained by each component.

Table 4.47

PAF Extraction Sums of Squared Loadings for Father Items with Prison Participants

Factor	% of Variance	Cumulative %
1	30.923	30.923
2	16.910	47.833
3	4.821	52.653
4	3.617	56.270

A summary of the PAF with a direct oblimin rotation pattern matrix and structure matrix appears in Table 4.48 and Table 4.49, respectively. The coefficient display format is sorted by size and suppresses small coefficients with an absolute value below .4.

Table 4.48

PAF with Direct Oblimin Rotation Pattern Matrix on the Father Items with Prison Participants

Pattern Matrix[a]

	Factor			
	1	2	3	4
ASPA40	.644			
ASPA30	.638			
ASPA35	.636			
ASPA25	.566			
ASPA37	.471			
ASPA22		.837		
ASPA26		.790		
ASPA36		.656		
ASPA31		.632		
ASPA24		.431		
ASPA23			-.921	
ASPA29			-.811	
ASPA32			-.713	
ASPA38			-.527	
ASPA39				.692
ASPA34				.556
ASPA33	.481			-.549
ASPA28				.525
ASPA21	.459			-.520
ASPA27				-.439

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 15 iterations.

Table 4.49

PAF with Direct Oblimin Rotation Structure Matrix on the Father Items with Prison Participants

Structure Matrix

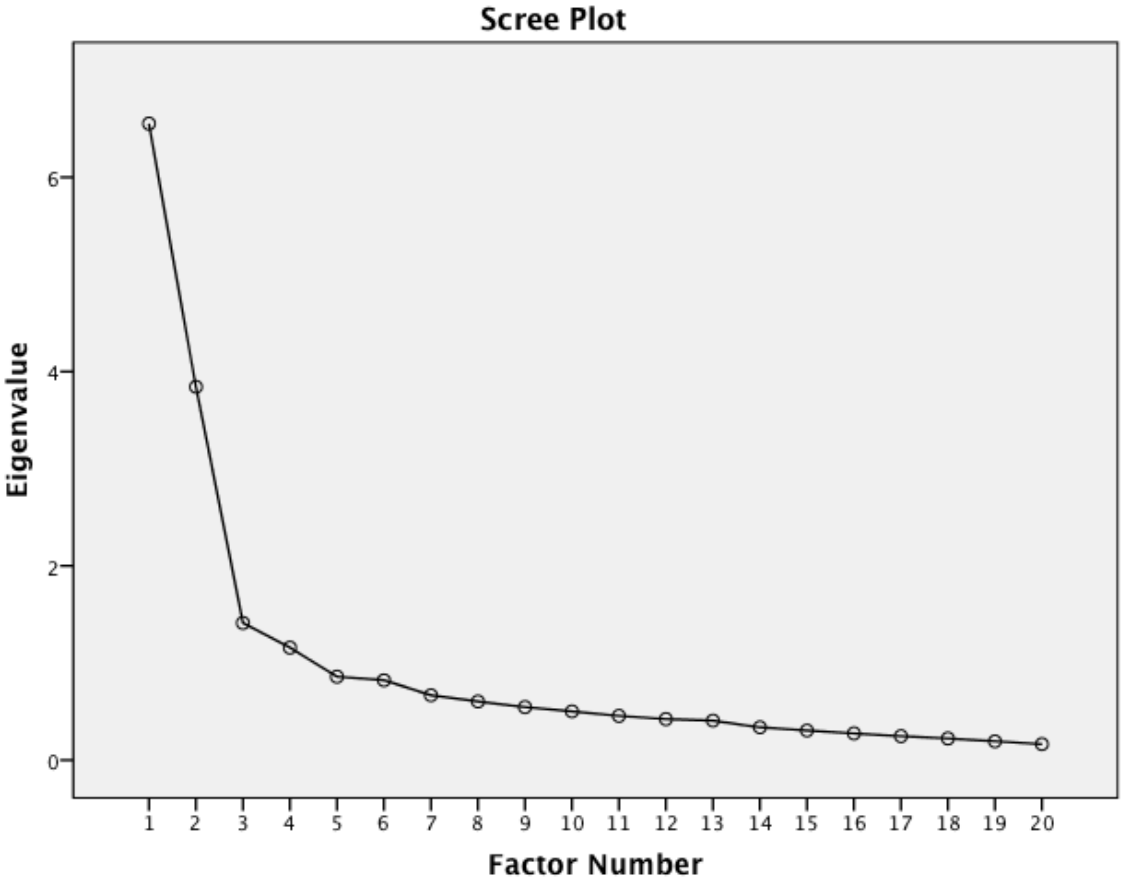
	Factor			
	1	2	3	4
ASPA40	.773		-.586	
ASPA37	.678		-.659	-.576
ASPA33	.661		-.578	-.639
ASPA30	.623			
ASPA35	.598			
ASPA25	.560			
ASPA26		.823		.451
ASPA22		.782		
ASPA31		.701		.435
ASPA36		.644		
ASPA24		.466		
ASPA23			-.862	
ASPA29			-.794	
ASPA38	.527		-.745	-.544
ASPA32			-.709	
ASPA39		.507		.736
ASPA34		.533		.689
ASPA21	.601		-.511	-.622
ASPA27	.514		-.604	-.621
ASPA28		.524		.595

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

A scree-plot of the EFA on the ASPA-SF father items with the prison population is provided in Figure 4.8.

Figure 4.8

Scree-Plot of ASPA-SF Father Items with Prison Population



Like the mother portion, the data was examined for extracting a fixed number of five factors. Table 4.49 and Table 4.50 display the pattern and structure matrices based on restricting the data to a five-factor model for the father items.

Table 4.50

Pattern Matrix for Father Five-Factor Model with Prison Participants

Pattern Matrix[a]

	Factor				
	1	2	3	4	5
ASPA33	.882				
ASPA37	.863				
ASPA21	.710				
ASPA27	.628				
ASPA38	.523				
ASPA22		.854			
ASPA26		.764			
ASPA36		.649			
ASPA31		.586			
ASPA24		.428			
ASPA23			-.892		
ASPA29			-.744		
ASPA32			-.667		
ASPA34				.748	
ASPA39				.740	
ASPA28				.534	
ASPA30					-.755
ASPA25					-.600
ASPA35					-.424
ASPA40	.413				-.420

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 9 iterations.

Table 4.51

Structure Matrix for Father Five-Factor Model with Prison Participants

Structure Matrix

	Factor				
	1	2	3	4	5
ASPA37	.896		-.580		-.474
ASPA33	.887		-.490		-.476
ASPA21	.793		-.436		-.461
ASPA27	.769		-.541		
ASPA38	.765		-.696		
ASPA40	.717		-.537		-.692
ASPA26		.821		.543	
ASPA22		.794			
ASPA31		.693		.526	
ASPA36		.645			
ASPA24		.470			
ASPA23	.498		-.879		
ASPA29	.505		-.789		
ASPA32	.458		-.711		
ASPA39		.479		.794	
ASPA34		.504		.785	
ASPA28		.505		.666	
ASPA30	.426				-.739
ASPA25					-.618
ASPA35					-.555

Extraction Method: Principal Axis Factoring.
Rotation Method: Oblimin with Kaiser Normalization.

The internal consistency reliability of the ASPA-SF father scale was α =.787 with the prison population. The Cronbach's alpha for the five factors on the 4-item father subscales were: Father-Safe = .90, Father-Dependent = .74, Father-Parentified = .84, Father-Fearful = .83, and Father-Distant = .76. The means of the subscales were: Father-Safe = 10.33, Father-Dependent = 8.33, Father-Parentified = 8.35, Father-Fearful = 7.80, and Father-Distant = 8.73.

Summary

Within this chapter, the results of the test construction, test tryout, confirmatory factor analysis, and validity of the ASPA-SF were presented. Furthermore, the exploration of the

ASPA-SF with a prison population was reported. Chapter 5 will include further discussion on the results along with the implications of the study, limitations of the study, and suggestions for future research.

CHAPTER FIVE

DISCUSSION

The ASPA (Snow, Sullivan, Martin, & Helm, 2005) is a rating scale designed to assess individuals' patterns of relating based on their early childhood experiences with their mother and father caregivers. In several studies, the ASPA has demonstrated strong psychometric properties, including reliability and validity. Given increasing demands on clinicians to do more with less time, a need for efficient and effective methods of assessment has emerged. The present study was designed to evaluate if a shorter form of the ASPA (i.e., ASPA-SF) could be constructed, while still maintaining similar psychometric properties to the original instrument. The following chapter will discuss the summary of results, implications of the study, limitations, and future research before ending with a conclusion.

Summary of Results

Research Question 1 asked whether the ASPA could be modified into an abbreviated version while maintaining the instrument's consistency reliability. The following two null research hypotheses were presented with this question: 1) The ASPA-SF is not an internally consistent instrument to measure patterns of relating, and 2) There are no statistically meaningful underlying factor structures of patterns of relating as reported on the ASPA-SF in a test tryout. To determine the outcome of Research Hypothesis 1, two EFAs were employed to examine the underlying factor structure of the ASPA. As previously mentioned, the EFA procedure is designed to discover the one underlying factor model that bests fits the data. To do this, the researcher must make several important decisions, including choosing the method of extraction,

number of factors to retain, type of rotation, and sample size. In this study, two different methods of extraction and rotation were chosen to illustrate the similarities and differences between methods. The initial EFAs performed on the ASPA supported a five-factor solution to the 84 items, and thus, the test construction of the ASPA-SF reciprocated the structural model. Hypothetically, this analysis suggested the mother and father portions of the ASPA-SF could be developed into a 40-item (i.e., 4-item per caregiver scale) or 30-item (i.e., 3-item per caregiver scale) measure.

Analyses showed that the ASPA-SF was expected to maintain the five-factor structure and high reliability of the original measure. With a mean internal consistency reliability estimate of $\alpha = 0.769$ across the mother subscales and an $\alpha = 0.804$ across the father subscales of the original ASPA, a Cronbach's alpha estimate indicated the 40-item would have a mean internal consistency reliability of $\alpha = .724$ for the mother scale and an $\alpha = .728$ for the father scale. In terms of the 30-item rendition, the internal consistency reliability was $\alpha = .654$ for the mother scale and $\alpha = .630$ for the father scale. In both versions of the abbreviated instrument, the results indicated that slight reductions would occur in the internal consistency when compared to the original instrument. Slight reductions in internal consistency reliability are not necessarily problematic when the measure is designed to assess a broad domain using few items. Boyle (1991) recommended modest reliabilities of between $\alpha = 0.65$ to 0.75 when the construct being measured is broad. As the short form was composed of items that showed high factor loadings and not items chosen at random, the researcher expected that internal consistency reliability estimates of the 40-item version would be more similar to those of the original ASPA than the 30-item version of the ASPA-SF. Based on Boyle's recommendation, the 40-item ASPA-SF met

the modest reliability, thus rejecting the null Research Hypothesis 1 and partially answering Research Question 1.

Research Hypothesis 2 was examined by evaluating the underlying factor structures of patterns of relating as reported on the ASPA-SF in a test tryout. From the test tryout, the ASPA-SF was examined as a 40-item (i.e., 20-items pertaining to mother and 20-items regarding the father) and 30-item (i.e., 15-items in regards to the mother and 15-items in relation to the father) measure. In particular, the 40-item ASPA-SF was found to have five statistically meaningful underlying factor structures of patterns of relating (i.e., safe, dependent, parentified, fearful, and distant) with regard to each caregiver. Conversely, the 30-item version produced only four factors of patterns of relating based on each caregiver, thus altering the theoretical notion for the original instrument. For this reason, the 40-item instrument was selected for the ASPA-SF.

The 40-item ASPA-SF generated good construct validity and reliability. Table 5.1 presents the Cronbach's alpha coefficients for the subscales of the mother and father portions of the original ASPA and ASPA-SF.

Table 5.1

Cronbach's alphas for ASPA and ASPA-SF

Instrument	Safe	Dependent	Parentified	Fearful	Distant
ASPA Mother	.92	.74	.67	.75	.86
ASPA-SF Mother	.88	.73	.68	.81	.77
ASPA Father	.91	.65	.81	.82	.91
ASPA-SF Father	.90	.69	.81	.81	.83

When comparing the alpha coefficients between the original and short-form versions of the ASPA, the patterns of relating subscales had slight variation. In some cases, the Cronbach's

alpha was slightly reduced from the original ASPA when compared to the abbreviated subscale (i.e., mother-safe, mother-distant, and father-distant). Conversely, in other subscales, the alpha was slightly increased from the original ASPA in relation to the short-form (i.e., mother-parentified, mother-fearful, and father-dependent). These findings indicated there are statistically meaningful underlying factor structures of patterns of relating on the ASPA-SF. Furthermore, the results indicated that the factor structures are closely reliable to those of the original ASPA. With these findings, the rejection of null Research Hypotheses 1 and 2 were both warranted, thus answering Research Question 1.

Research Question 2 asked whether a confirmatory factor analysis could verify the factor structure of the ASPA-SF, and thus items within the instrument as well. Research Hypothesis 3 stated that there is not a consistent structural model in comparison to the exploratory factor analyses of the ASPA-SF. After the CFA, the mother and father portions of the ASPA-SF indicated that the factor structures and item selections were an acceptable model fit. In particular, the results indicated that the mother factor structure and items had a model fit where $\chi 2$ (*df* = 160) = 274.46, CMIN/DF = 1.715, CFI = .93, TLI = .91, RMR = .07, and RMSEA = .05. Likewise, the CFA on the father portion of the ASPA-SF indicated a model fit where: $\chi 2$ (*df* = 160) = 395.72, CMIN/DF = 2.47, CFI = .90, TLI = .90 RMR = .10, and RMSEA = .07. These findings revealed the mother and father portion of the ASPA-SF had $\chi 2$ and CMIN/DF results that indicated a good (i.e., < 2; mother portion of ASPA-SF) and reasonably well (i.e., < 5; father portion of ASPA-SF) fit between the hypothetical models and the sample data (Carmines & McIver, 1981; Marsh & Hocevar, 1985). Furthermore, the CFI and TLI values were both larger than .90, which is generally considered to indicate an acceptable model fit (Hu & Bentler, 1999). The RMR values were both ≤.10, thus designating that there is no justification for the rejection

of the mother and father models (Medsker, Williams, & Holahan, 1994). Lastly, the RMSEA values reflected a good model fit (i.e., < .05) for the mother portion of the ASPA-SF and a reasonable model fit (i.e., < .10) for the father portion of the ASPA-SF (Hair et al., 1998). The confirmatory factor analyses provided the means for establishing the ASPA-SF as an acceptable model for assessing an individual's patterns of relating based on their early childhood experiences with their mother and father caregivers. Therefore, the findings supported the rejection of the null Research Hypothesis 3 and satisfactorily answered Research Question 2.

Research Question 3 asked what is the concurrent and discriminant validity of the ASPA-SF when examined with the Parental Bonding Instrument on the same participant group. Research Hypothesis 4 stated that there is no significant relationship between the constructs in the ASPA-SF and the PBI. Evaluating both the original 2-factor structure of the PBI (Parker et al., 1979) and Kendler's (1996) 3-factor structure, the results indicated that the subscales of the ASPA-SF correlated with both PBI models. In particular, the findings showed a weak positive correlation between the ASPA-SF's subscale of Mother-Safe and the original PBI's subscale of Mother-Care. The results also indicated that the ASPA-SF subscale of Mother-Safe had a moderate negative correlation to Mother-Overprotection of the 2-factor PBI model. The findings showed that the ASPA-SF subscales of Mother-Fearful had a weak positively correlation and Mother-Distant had a strong positive correlation to the subscale of Mother-Overprotection in the original PBI model. Furthermore, the results indicated that the Mother-Dependent and Mother-Parentified scales did not correlate with the 2-factor PBI model.

When examined in light of Kendler's (1996) 3-factor model, each mother subscale of the ASPA-SF correlated to the PBI. In particular, Mother-Safe had a strong positive correlation to Mother-Warmth of the PBI. In addition, Mother-Distant of the ASPA-SF had a moderate

negative correlation to Mother-Warmth. The subscale of Mother-Dependent had a weak positive correlation and Mother-Fearful had a weak positive correlation with Mother-Authoritarianism. Likewise, Mother-Safe of the ASPA-SF had a negative positive correlation, while Mother-Distant had a strong positive correlation to the Mother-Authoritarianism subscale of Kendler's PBI model. Therefore, the results indicated that there was a significant relationship between the mother constructs in the ASPA-SF and the two different PBI models.

The study also investigated the father portion of the ASPA-SF in comparison with the father-portions of both models of the PBI. In terms of the original PBI, the findings showed that each subscale of the ASPA-SF was correlated to both subscales in the PBI. In particular, the subscale of Father-Safe had a moderate positive correlation with Father-Care in the PBI. Father-Fearful and Father-Distant of the ASPA-SF had a moderate positive correlation to Father-Overprotection of the original PBI model.

With regard to Kendler's (1996) PBI model, the father subscales of the ASPA-SF correlated with each father subscale of the 3-factor structure. Specifically, the results indicated that the subscales of Father-Safe had a strong positive correlation to Father-Warmth in Kendler's model. Father-Dependent and Father-Parentified had a moderate positive correlation to Kendler's subscale of Father-Warmth. The findings also showed that the ASPA-SF's Father-Distant had a moderate negative correlation to Kendler's Father-Warmth. Furthermore, the subscales of Father-Dependent, Father-Parentified, and Father-Fearful in the ASPA-SF had a weak positive correlation to the subscale of Father-Protectiveness in the 3-factor model. Lastly, the results showed that Father-Fearful and Father-Distant of the ASPA-SF had a weak positive correlation to Father-Authoritarianism of Kendler's PBI model. Thus, the findings revealed that there was a significant relationship between the father constructs in the ASPA-SF and the two father PBI

models. With these findings, the rejection of Research Hypothesis 4 was warranted, therefore answering Research Question 3.

Research Question 4 asked how the factor structure would emerge in a prison population. Research Hypothesis 5 referenced that the ASPA-SF is not an internally consistent instrument to measure patterns of relating with a prison population. First, the study examined the validity of the ASPA-SF constructs with the prison population. The initial eigenvalues for the mother items on the ASPA-SF supported a four-factor model, as there were four values over 1.0. While this is apparent, the reasoning for a fifth factor could be argued as the pattern and structure matrices display the five-factor structure theoretically as all of the items loaded under a factor in collective alignments. In addition, the EFA showed that a fifth factor was loaded directly below the 1.0 eigenvalue cutoff at .953. It is important to reference that this unaccounted fifth factor in the four-factor model appeared to be the Mother-Safe subscale within the ASPA-SF. The findings also indicated that items within the Mother-Safe subscale collapsed negatively under the Mother-Distant subscale and, thus, did not have strong enough correlations to become their own separate factor for this specific population.

Second, the study examined the father-item responses from the same prison population. In this analysis, the responses from the prison population again supported a four-factor model of the ASPA-SF with eigenvalues over 1.0. Different from the mother portion of the ASPA-SF, these results indicated that the Father-Safe and Father-Dependent subscales merged into one factor within the prison population (i.e., in comparison to the negative correlations of the Mother-Safe items on to the Mother-Distant subscale). Furthermore, one item shifted from Father-Distant to Father-Fearful (item 24 – I worried my father would let me down), and one item loaded negatively on Father-Distant but did not cross-load on to the merged Father-

Safe/Father-Dependent factor (item 27 – It was easy for me to be affectionate with my father). Thus, the meaning of the father items and subscales of the ASPA-SF were altered by the prison participants' responses.

Third, the study examined the responses based on the ASPA-SF's five-factor model. Table 5.2 and Table 5.3 present the internal consistency reliabilities and mean scores of the ASPA-SF in both undergraduate/graduate students and prison participants.

Table 5.2

Internal Consistency Reliabilities and Mean Scores of the Mother Portion in the ASPA-SF

Population	Mother-Safe		Mother-Dependent		Mother-Parentified		Mother-Fearful		Mother-Distant	
Undergraduate and Graduate	.87	15.00	.74	10.46	.69	12.00	.80	6.16	.78	7.15
Prison	.85	13.90	.65	9.52	.66	13.73	.75	7.03	.76	8.00

Table 5.3

Internal Consistency Reliabilities and Mean Scores of the Father Portion in the ASPA-SF

Population	Father-Safe		Father-Dependent		Father-Parentified		Father-Fearful		Father-Distant	
Undergraduate and Graduate	.90	11.77	.69	9.51	.81	9.49	.81	6.63	.83	7.87
Prison	.90	10.32	.74	8.33	.84	8.35	.83	7.80	.76	8.73

At first glance, these results the internal consistency reliability compared very similarly with the results of the undergraduate and graduate students. Based on these preliminary findings, the ASPA-SF was indicated to be an internally reliable instrument with a prison population.

The results of the exploratory factor analysis based on restricting the extraction to five-factors also showed issues with reliability and validity. In particular, two items did not load in the mother portion. These included item 1 (I had my mother with me when I was upset) from the

Mother-Safe subscale and item 8 (I wish there was less anger in my relationship with my mother) from the Mother-Distant subscale. In addition, another item from the Mother-Distant subscale loaded positively with three negative Mother-Safe items (item 12 – I often felt angry with my mother without knowing why). In the father portion, one item shifted from Father-Distant to Father-Fearful (item 24 – I worried my father would let me down) and one item shifted from Father-Parentified to Father-Safe (item 38 – I enjoyed taking care of my father). As the exploratory factor analysis could not provide specific details of model fit, the data should be reanalyzed in the future by a confirmatory factor analysis. In doing so, more information on the individual items and structural model could be understood on the prison participants' responses.

Nonetheless, the results of these analyses do not verify the utilization of the ASPA-SF with prison participants, as the constructs of early childhood experiences with caregivers appear to have different meanings with this population than undergraduate and graduate students. These findings determined that although the ASPA-SF indicated good reliability ratings, the validity of the constructs were not established for working with a prison population. In conclusion, the null Research Hypothesis 5 could not be rejected, thus answering Research Question 4.

Implications of the Study

The implications of this study have provided evidence for the utilization of the ASPA-SF with undergraduate and graduate students. The study displayed the process of creating an abbreviated version through exploratory factor analyses, a confirmatory factor analysis, and examining the validity of the instrument in comparison with the PBI. In particular, the analyses have specified acceptable levels of internal consistency reliability across varying demographics, and the strength of the eigenvalues has indicated that the ASPA-SF has good construct validity with undergraduate and graduate students. Therefore, factor analyses have designated that each

factor is a recalled childhood pattern of relating to mother and father figures, and that each subscale represented a conceptually different pattern for undergraduate and graduate student participants. In addition, the examination of the ASPA-SF to the PBI provided evidence that the ASPA-SF is measuring conceptually different constructs, as each patterns of relating subscale in the ASPA-SF related to the parental bonding subscales in the 2-factor and 3-factor PBI models.

Although the internal consistency reliability of the ASPA-SF was maintained with prison participants, the validity of the instrument with this population was not established. The findings from the prison population suggested that this sample has a different conceptual framework of attachment and patterns of relating when compared to both undergraduate and graduate students. In both cases of recalling early childhood experiences with mother and father caregivers, the prison participants' responses were unable to distinguish the characteristics of patterns of relating that their undergraduate and graduate student counterparts established.

These findings appear to support the concept of internal working models in attachment theory. Attachment theorists have referenced insecure attachment styles, as attributing to psychopathology and personality disorders in adulthood (Haven & Shaver, 1987; Fonagy et al., 1996; Bowlby 1969, 1982). Research has indicated that a poor pattern of relating to the primary caregiver from childhood has a long-term negative impact and could possibly contribute to a tendency to participate in criminal activity (Hayslett-McCall & Bernard, 2002). In addition, criminal behavior is associated with higher rates of psychopathological personalities (i.e., antisocial and borderline personality disorders) and proportions of insecure attachment patterns, specifically avoidant, when compared to their non-criminal counterparts (Campbell, Porter, & Santor, 2004; Jordan et al., 1996; Goldstein & Higgins-D'Allessandro, 2001; Ogloff, 2005).

While more information regarding clinical and family history would have been worthwhile on this specific prison population (i.e., specifically regarding psychopathology), the results suggest that the participants' representational models of early attachments with caregivers were conceptually different than their undergraduate and graduate student counterparts. Specifically, Snow et al. (2005) defined the safe pattern as being characterized by individuals who report that their primary caregiver was responsive and available when they needed them. Individuals with a safe pattern of relating received consistent love and care, and as adults, are able to give others love and care that they need. In particular, in both the four-factor and five-factor analyses, the results from both the four-factor and five-factor analyses indicated that the prison population was unable to distinguish these characteristics of love and care from other patterns of relating.

Nonetheless, the implications of the findings indicated that the ASPA-SF could be used to determine a pattern of relating to both mother and father figures with undergraduate and graduate students. The utilization of the ASPA-SF can be worthwhile in a counseling situation as the instrument can help individuals understand their patterns of relating to significant others, children, and in relationships in general**.** The final version of the ASPA-SF is provided in Appendix C with the scoring sheet located in Appendix D. In a similar method to the original ASPA, a graphing of the scores on each of the scales was created for the ASPA-SF to assist clinicians and clients in being able to describe their early childhood experiences and patterns of relating to their caregivers. This graphing of the scores provides a profile of an individual's patterns of relating. By analyzing the profile, a Secure versus Insecure attachment style can be determined along with a predisposition for particular patterns of relating to others in adulthood.

Limitations and Future Research

As referenced in Chapter One, the researcher recognizes the following limitations of the study, which confine the implications of the research. The first limitation includes the validity of self-report measures of attachment styles being questioned. While researchers have argued that self-report measures can access unconscious motivators to attachment patterns (Rholes & Simpson, 2004; Snow et al., 2005), the position has been debated, as attachment has been construed as a rote (rather than a conscious) process. The second limitation of the study includes the restriction by sampling bias. The study's sample consists of issues with generalizability, as the participants came from the southeastern United States. In addition, the findings that support the utilization of the ASPA-SF are comprised of undergraduate and graduate students, and the results that did not verify the theoretical structure were composed of prison participants. Therefore, additional studies from a variety of populations can only serve to strengthen the meaning of the ASPA-SF and to fine-tune the significance of the patterns. These include and are not limited to diverse populations, such as racial, ethnic, age ranges, same sex parents, socio-economic, and clinical demographics.

Furthermore, the ASPA-SF was created from archive responses from the original ASPA. For this reason, future research should evaluate whether the abbreviated version will be altered in a current population. Although the study evaluated the meaning of the ASPA-SF to the PBI, further studies should also compare the results of the ASPA-SF with other self-report measures of attachment in order to continue to strengthen to the psychometric properties of the instrument. Future studies should also attempt to determine the differences in responses on the ASPA-SF across the lifespan. Additional research utilizing the ASPA-SF may contribute to a better understanding of the patterns and how the abbreviated instrument may be used to assist clinicians in various settings.

Like the ASPA, the ASPA-SF also can help further research on attachment with future studies exploring the relationship of parentification and dependency on attachment styles. Exclusive to the ASPA and ASPA-SF is the opportunity for researchers to study attachment to both mother and father figures and the difference in patterns of relating. Hence, more research is needed to determine the influence of caregivers who are not viewed as primary in childhood. Although attachment theory considers the primary caregiver to have the major influence on a person's development of a sense of self and self and others, more research is needed to determine the influence of other caregivers in this development (e.g., step parents, grandparents, and siblings).

Future studies should also reevaluate the responses of the ASPA-SF with the prison population. As this study utilized an exploratory factor analysis, the data should be reexamined through a confirmatory factor analysis to understand the model fit and item responses of the prison population. Lastly, studies could also utilize the ASPA-SF in conjunction with parenting styles to determine the intergenerational component of patterns of relating and attachment styles.

Conclusion

Although more research is needed to examine the meaning of the ASPA-SF across populations, the results of this study have provided evidence for the usage of the instrument. Similar to the original ASPA, the ASPA-SF is a unique self-report instrument assessing patterns of relating to parents. The ASPA-SF can be used to determine a pattern of relating to both mother and father figures, and in a counseling situation can help the client understand his or her patterns of relating to significant others, children, and in relationships in general**.**

In conclusion, there is a need for further studies to use the ASPA-SF, though this current study provides a foundation from which to build future research. The ASPA-SF shows promise

for determining Secure versus Insecure attachment and defining patterns of relating. The strength of the instrument was demonstrated by the exploratory factor analyses, the confirmatory factor analysis, and the comparison with the Parental Bonding Instrument to support future use of the ASPA-SF. Therefore, this study has established that the ASPA-SF has the ability to be an instrument for theory building and theory testing. Most of all, the ASPA-SF provides clients with information on their patterns of relating to parents from childhood and allows the clinician to help the client explore how those patterns may influence a sense of self and self and others in a more time efficient manner.

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APPENDICES

APPENDIX A

ADULT SCALE OF PARENTAL ATTACHMENT
Snow, Martin & Helm

Directions (please read)

Please answer all of the following questions on the behavior of the person who you most identified as a mother figure while you were a child. This person may have been a step-parent, a grandmother, an aunt or a woman who was unrelated but a primary caregiver. Choose the person you spent the most time with before age fourteen. Should you feel there was not a person in your life who you considered a mother figure, do not complete this section, but move on to the next section. Answer each question individually and as accurately as possible. Do not worry about consistency across answers; we expect contradictions will exist in some cases.

	Never	Seldom	Sometimes	Frequently	Constantly
1. I had my mother with me when I was upset.	1	2	3	4	5
2. I felt lost when I was upset and my mother was not around.	1	2	3	4	5
3. When I was anxious I desperately needed to be close to my mother.	1	2	3	4	5
4. I felt relieved when my mother went away for a few days.	1	2	3	4	5
5. I resented my mother spending time away from me.	1	2	3	4	5
6. I felt abandoned when my mother was away for a few days.	1	2	3	4	5
7. I had a terrible fear that my relationship with my mother would end.	1	2	3	4	5
8. I was afraid I would lose my mother's love.	1	2	3	4	5
9. I was confident my mother would always love me.	1	2	3	4	5
10. I was confident my mother would try to understand my feelings.	1	2	3	4	5
11. I worried that my mother would let me down.	1	2	3	4	5
12. When I was upset, I was confident my mother would be there to listen to me.	1	2	3	4	5
13. I turned to my mother for many things including comfort and reassurance.	1	2	3	4	5
14. I talked things over with my mother.	1	2	3	4	5
15. Things had to be really bad for me to ask my mother for help.	1	2	3	4	5
16. I wish there was less anger in my relationship with my mother.	1	2	3	4	5
17. I got frustrated when my mother left me alone.	1	2	3	4	5
18. My mother seemed to notice me only when I was angry.	1	2	3	4	5
19. I got furious when I did not get any comfort from my mother.	1	2	3	4	5
20. I got really angry at my mother because I thought she could have made more time for me.	1	2	3	4	5
21. I often felt angry with my mother without knowing why.	1	2	3	4	5

ADULT SCALE OF PARENTAL ATTACHMENT

	Never	Seldom	Sometimes	Frequently	Constantly
22. My mother was always disappointing me.	1	2	3	4	5
23. I put my mother's needs before my own.	1	2	3	4	5
24. It was hard for me to get on with my work if my mother had a problem.	1	2	3	4	5
25. I enjoyed taking care of my mother.	1	2	3	4	5
26. I expected my mother to take care of her problems	1	2	3	4	5
27. I made a fuss over my mother.	1	2	3	4	5
28. I sacrificed my own needs for the benefit of my mother.	1	2	3	4	5
29. It made me feel important to be able to do things for my mother.	1	2	3	4	5
30. I felt it was best to depend on my mother.	1	2	3	4	5
31. I wanted to get close to my mother, but I kept pulling back.	1	2	3	4	5
32. I wanted my mother to rely on me.	1	2	3	4	5
33. I usually discussed my problems and concerns with my mother.	1	2	3	4	5
34. It was easy for me to be affectionate with my mother.	1	2	3	4	5
35. I was so used to doing things on my own that I did not ask my mother.	1	2	3	4	5
36. I felt there was something wrong with me because I was distant from my mother.	1	2	3	4	5
37. I often felt too dependent on my mother.	1	2	3	4	5
38. I wish I could be a child again and be taken care of by my mother.	1	2	3	4	5
39. I relied on myself and not my mother to take care of me.	1	2	3	4	5
40. I needed my mother to take care of me.	1	2	3	4	5
41. I was never certain about what I should do until I talked to my mother.	1	2	3	4	5
42. I was helpless without my mother.	1	2	3	4	5

ADULT SCALE OF PARENTAL ATTACHMENT

	Never	Seldom	Sometimes	Frequently	Constantly
64. My father was always disappointing me.	1	2	3	4	5
65. I put my father's needs before my own.	1	2	3	4	5
66. It was hard for me to get on with my work if my father had a problem.	1	2	3	4	5
67. I enjoyed taking care of my father.	1	2	3	4	5
68. I expected my father to take care of his problems	1	2	3	4	5
69. I made a fuss over my father.	1	2	3	4	5
70. I sacrificed my own needs for the benefit of my father.	1	2	3	4	5
71. It made me feel important to be able to do things for my father.	1	2	3	4	5
72. I felt it was best to depend on my father.	1	2	3	4	5
73. I wanted to get close to my father, but I kept pulling back.	1	2	3	4	5
74. I wanted my father to rely on me.	1	2	3	4	5
75. I usually discussed my problems and concerns with my father.	1	2	3	4	5
76. It was easy for me to be affectionate with my father.	1	2	3	4	5
77. I was so used to doing things on my own that I did not ask my father.	1	2	3	4	5
78. I felt there was something wrong with me because I was distant from my father.	1	2	3	4	5
79. I often felt too dependent on my father.	1	2	3	4	5
80. I wish I could be a child again and be taken care of by my father.	1	2	3	4	5
81. I relied on myself and not my father to take care of me.	1	2	3	4	5
82. I needed my father to take care of me.	1	2	3	4	5
83. I was never certain about what I should do until I talked to my father.	1	2	3	4	5
84. I was helpless without my father.	1	2	3	4	5

ADULT SCALE OF PARENTAL ATTACHMENT

Please answer the following questions about yourself.

	Never	Seldom	Sometimes	Frequently	Constantly
85. I felt the hardest thing to do was to stand on my own.	1	2	3	4	5
86. Closeness to others frightens me because they may reject me.	1	2	3	4	5
87. I let people get close to me.	1	2	3	4	5
88. I'm afraid of getting close to others.	1	2	3	4	5
89. I have a hard time giving affection to someone.	1	2	3	4	5
90. I've built a wall around myself.	1	2	3	4	5
91. Whenever I feel myself getting close to someone, I push them away.	1	2	3	4	5
92. I look to others for support.	1	2	3	4	5
93. I only feel secure when I'm by myself.	1	2	3	4	5
94. I take great pride in being independent.	1	2	3	4	5
95. My strength comes only from myself.	1	2	3	4	5
96. I get my sense of security from myself.	1	2	3	4	5
97. Caring for someone would make me feel weak and exhausted.	1	2	3	4	5
98. Being close to someone makes me think of suffocation.	1	2	3	4	5
99. I would lose my feeling of security if I had to share my life with someone.	1	2	3	4	5
100. I'm afraid to care for someone because I would lose myself.	1	2	3	4	5
101. Needing someone would make me feel weak.	1	2	3	4	5
102. I feel I can share my whole life with someone.	1	2	3	4	5
103. I wish I had a single lasting relationship.	1	2	3	4	5
104. I have close ties to someone.	1	2	3	4	5
105. I long for someone to share my feelings with.	1	2	3	4	5
106. I wish there was someone close who needed me.	1	2	3	4	5

APPENDIX B

ADULT SCALE OF PARENTAL ATTACHMENT
Technical Guide

The Adult Scale of Parental Attachment (ASPA) is an instrument to obtain information concerning an adult's perception of patterns of relating to both mother and father figures. Patterns of relating can help determine a person's attachment style. Attachment styles influence an individual's relationship with others throughout life and particularly influence the parent-child relationship. By assessing patterns of relating, an individual becomes aware of how they may relate to others.

Persons experiencing safe patterns of relating to parents will feel secure in relationships; whereas those who have primarily related in a dependent or parentified pattern may experience problems in feeling securely attached to those around them. The dependent or parentified patterns may influence the person to feel insecure and anxious in relationships. For those who experienced fearful or distant patterns of relating with parents, relationships may be difficult. There may be a feeling of insecurity and a need to avoid close relationships with a partner or children.

The scoring of the ASPA includes a pattern of relating to both mother and father. The mean score of the ASPA is located at "50" and plus or minus 10 points indicates 1 standard deviation. The graph created from scoring will assist in understanding the patterns of relating. It is important to consider the patterns of relating to both parents. The ASPA is meant as a guide to perceptions of childhood relationships and should only be used to help the person understand experiences of relationships.

Below is are definitions of the different patterns of relating. The total score for the ASPA may indicate either a secure or insecure attachment with measures over (+)(-) 1 standard deviation indicating a tendency toward an insecure attachment. However, individuals develop and change throughout the lifespan, and patterns of relating in childhood may have changed through other experiences.

PATTERNS OF RELATING

M = Mother
F = Father

Safe (MS & FS) – This pattern of relating provided comfort and security. The child may have experienced confidence in parent's availability and support.

Dependent (MD & FD) - This pattern of relating indicates a need for the parent to always be available. The child may have experienced helplessness and uncertainty when the parent was not available.

Parentified (MP & MP) - This pattern of relating indicates feeling responsible for meeting the parent's needs. The child may have experienced feelings of importance and enjoyed being helpful.

Distant (MA & FA) – This pattern of relating indicates disappointment in the parent's support and availability. The child may have experienced a need to distance from the parent and may have experienced anger toward the parent.

Fearful (MF & FF) – This pattern of relating indicates a fear of abandonment and a belief that the parent would not be available for support. The child may have experienced anger toward parent or frustration with the parent.

Scale: 50 = Mean of Sample, (60)(40) = 1 standard deviation, (70)(30) 2 standard deviation, etc.

Means were established using a sample of undergraduate and graduate students from two southeastern universities.

High scores on any of the patterns of relating may indicate attachment issues and influence an individual's experiences in relationship with others and parenting style.

TO SCORE:

1. Place number for each individual item on the scoring sheet for both mother and father. Total each pattern of relating and overall total.
2. Transfer total for each pattern of relating and overall total to profile sheet. Circle the number indicating the score for each pattern of relating. Draw line graph connecting score to view overall profile,

Page 2

ADULT SCALE OF PARENTAL ATTACHMENT
Scoring Mother

	MS-Safe	MD-Dependent	MP-Parentifed	MF-Fearful	MA-Distant
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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11.					
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27.					
28.					
29.					
30.					
31.					
32.					
33.					
34.					
35.					
36.					
37.					
38.					
39.					
40.					
41.					
42.					
TS					
Total					

Page 3	**ADULT SCALE OF PARENTAL ATTACHMENT** **Scoring Father**	

	FS-Safe	FD-Dependent	FP-Parentifed	FF-Fearful	FA-Distant
43.					
44.					
45.					
46.					
47.					
48.					
49.					
50.					
51.					
52.					
53.					
54.					
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65.					
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67.					
68.					
69.					
70.					
71.					
72.					
73.					
74.					
75.					
76.					
77.					
78.					
79.					
80.					
81.					
82.					
83.					
84.					
TS					
Total					

ADULT SCALE OF PARENTAL ATTACHMENT
Profile

Scoring Directions: Using scoring sheet, circle score for each pattern of relating and then draw a graph to view overall profile.

	MS	MD	MP	MF	MA	MT	FS	FD	FP	FF	FA	FT
80	58	27	31	23	41	177	62	23	32	30	58	143
75	54	25	29	21	38	166	57	21	30	27	53	135
70	50	23	27	19	35	155	52	19	27	24	48	127
65	46	21	25	17	32	144	47	17	25	21	43	119
60	42	19	23	15	29	133	42	15	22	18	38	111
55	38	17	21	13	26	122	37	13	20	15	33	103
50	34	15	19	11	23	111	32	11	17	12	28	95
45	30	13	17	9	20	100	27	9	15	9	23	87
40	26	11	15	7	17	89	22	7	12	6	18	79
35	22	9	13	5	14	78	17	5	9	3	13	71
30	18	7	11	3	11	67	12	3	7		8	62
20												
	___	___	___	___	___	___	___	___	___	___	___	___

APPENDIX C

ADULT SCALE OF PARENTAL ATTACHMENT-SHORT FORM

Directions: Please answer all of the following questions on the behavior of the person who you most identified as a mother figure while you were a child. This person may have been a step-parent, a grandmother, an aunt, or a woman who was unrelated but a primary caregiver. Choose the person you spent the most time with before age fourteen. Should you feel there was not a person in your life who you considered a mother figure, do not complete this section, but move on to the next section. Answer each question individually and as accurately as possible. Do not worry about consistency across answers; we expect contradictions will exist in some cases.

Survey Item	Scale				
	Never	Seldom	Sometimes	Frequently	Constantly
1. I had my mother with me when I was upset.	1	2	3	4	5
2. I resented my mother spending time away from me.	1	2	3	4	5
3. I was helpless without my mother.	1	2	3	4	5
4. I felt there was something wrong with me because I was distant from my mother.	1	2	3	4	5
5. I put my mother's needs before my own.	1	2	3	4	5
6. I felt abandoned when my mother was away for a few days.	1	2	3	4	5
7. I turned to my mother for many things including comfort and reassurance.	1	2	3	4	5
8. I wish there was less anger in my relationship with my mother.	1	2	3	4	5
9. I enjoyed taking care of my mother.	1	2	3	4	5
10. I got frustrated when my mother left me alone.	1	2	3	4	5
11. I was never certain about what I should do until I talked to my mother.	1	2	3	4	5
12. I often felt angry with my mother without knowing why.	1	2	3	4	5
13. I talked things over with my mother.	1	2	3	4	5
14. It was hard for me to get on with my work if my mother had a problem.	1	2	3	4	5
15. I felt it was best to depend on my mother.	1	2	3	4	5
16. I had a terrible fear that my relationship with my mother would end.	1	2	3	4	5
17. It made me feel important to be able to do things for my mother.	1	2	3	4	5
18. I needed my mother to take care of me.	1	2	3	4	5
19. I wanted to get close to my mother, but I kept pulling back.	1	2	3	4	5
20. I usually discussed my problems and concerns with my mother.	1	2	3	4	5

The Adult Scale of Parental Attachment was created by Snow, Sullivan, Martin, and Helm (2005), and later revised by Michael and Snow (2014) into a short form.

ADULT SCALE OF PARENTAL ATTACHMENT-SHORT FORM

Directions: Please answer all of the following questions on the behavior of the person who you most identified as a father figure while you were a child. This person may have been a step-parent, a grandfather, an uncle, or a man who was unrelated but a primary caregiver. Choose the person you spent the most time with before age fourteen. Should you feel there was not a person in your life who you considered a father figure, do not complete this section. Answer each question individually and as accurately as possible. Do not worry about consistency across answers; we expect contradictions will exist in some cases.

Survey Item	Scale				
	Never	Seldom	Sometimes	Frequently	Constantly
21. I turned to my father for many things including comfort and reassurance.	1	2	3	4	5
22. I felt abandoned when my father was away for a few days.	1	2	3	4	5
23. I put my father's needs before my own.	1	2	3	4	5
24. I worried my father would let me down.	1	2	3	4	5
25. I often felt too dependent on my father.	1	2	3	4	5
26. I resented my father spending time away from me.	1	2	3	4	5
27. It was easy for me to be affectionate with my father.	1	2	3	4	5
28. I wish there was less anger in my relationship with my father.	1	2	3	4	5
29. I sacrificed my own needs for the benefit of my father.	1	2	3	4	5
30. I felt it was best to depend on my father.	1	2	3	4	5
31. I got frustrated when my father left me alone.	1	2	3	4	5
32. It was hard for me to get on with my work if my father had a problem.	1	2	3	4	5
33. I talked things over with my father.	1	2	3	4	5
34. I often felt angry with my father without knowing why.	1	2	3	4	5
35. I needed my father to take care of me.	1	2	3	4	5
36. I had a terrible fear that my relationship with my father would end.	1	2	3	4	5
37. I usually discussed my problems and concerns with my father.	1	2	3	4	5
38. I enjoyed taking care of my father.	1	2	3	4	5
39. I felt there was something wrong with me because I was distant from my father.	1	2	3	4	5
40. I was never certain about what I should do until I talked to my father.	1	2	3	4	5

The Adult Scale of Parental Attachment was created by Snow, Sullivan, Martin, and Helm (2005), and later revised by Michael and Snow (2014) into a short form.

APPENDIX D

ADULT SCALE OF PARENTAL ATTACHMENT-SHORT FORM
Technical Guide

The Adult Scale of Parental Attachment–Short Form (ASPA-SF) is an instrument to obtain information concerning an adult's perception of patterns of relating to both mother and father figures. Patterns of relating can help determine a person's attachment style. Attachment styles influence an individual's relationship with others throughout life and particularly influence the parent-child relationship. By assessing patterns of relating, an individual becomes aware of how they may relate to others.

Persons experiencing safe patterns of relating to parents will feel secure in relationships; whereas those who have primarily related in a dependent or parentified pattern may experience problems in feeling securely attached to those around them. The dependent or parentified patterns may influence the person to feel insecure and anxious in relationships. For those who experienced fearful or distant patterns of relating with parents, relationships may be difficult. There may be a feeling of insecurity and a need to avoid close relationships with a partner or children.

The scoring of the ASPA-SF includes a pattern of relating to both mother and father. The mean score of the ASPA-SF is located at "50" and plus or minus 10 points indicates 1 standard deviation. The graph created from scoring will assist in understanding the patterns of relating. It is important to consider the patterns of relating to both parents. The ASPA-SF is meant as a guide to perceptions of childhood relationships and should only be used to help the person understand experiences of relationships.

Below are definitions of the different patterns of relating. The total score for the ASPA-SF may indicate either a secure or insecure attachment with measures over (+)(-) 1 standard deviation indicating a tendency toward an insecure attachment. However, individuals develop and change throughout the lifespan, and patterns of relating in childhood may have changed through other experiences.

PATTERNS OF RELATING

M = Mother
F = Father

Safe (MS & FS) – This pattern of relating provided comfort and security. The child may have experienced confidence in parent's availability and support.

Dependent (MD & FD) - This pattern of relating indicates a need for the parent to always be available. The child may have experienced helplessness and uncertainty when the parent was not available.

Parentified (MP & FP) - This pattern of relating indicates feeling responsible for meeting the parent's needs. The child may have experienced feelings of importance and enjoyed being helpful.

Fearful (MF & FF) – This pattern of relating indicates a fear of abandonment and a belief that the parent would not be available for support. The child may have experienced anger toward parent or frustration with the parent.

Distant (MA & FA) – This pattern of relating indicates disappointment in the parent's support and availability. The child may have experienced a need to distance from the parent and may have experienced anger toward the parent.

Scale: 50 = Mean of Sample, (60)(40) = 1 standard deviation, (70)(30) 2 standard deviation, etc.

Means were established using a sample of 1,075 participants from different genders, races, ages, and educational backgrounds.

High scores on any of the patterns of relating may indicate attachment issues and influence an individual's experiences in relationship with others and parenting style.

TO SCORE:
1. Place number for each individual item on the scoring sheet for both mother and father. Total each pattern of relating and overall total.

2. Transfer total for each pattern of relating and overall total to profile sheet. Circle the number indicating the score for each pattern of relating. Draw line graph connecting score to view overall profile.

ADULT SCALE OF PARENTAL ATTACHMENT-SHORT FORM
Technical Guide

Scoring Mother

Item	MS-Safe	MD-Dependent	MP-Parentified	MF-Fearful	MA-Distant
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
Total					

Scoring Father

Item	FS-Safe	FD-Dependent	FP-Parentified	FF-Fearful	FA-Distant
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
Total					

ADULT SCALE OF PARENTAL ATTACHMENT-SHORT FORM
Technical Guide

PROFILE

Scoring Directions: Using scoring sheet, circle score for each pattern of relating and then draw a graph to view overall profile.

	MS	MD	MP	MF	MA	FS	FD	FP	FF	FA
80				14	16	18	19	16	20	
79										
78										
77										
76										
75		19	20	12	14	16	18	14	18	
74										
73										
72										
71										
70	20	17	18	11	13	20	15	16	13	16
69										
68										
67										
66										
65	19	15	16	10	12	18	13	14	12	14
64										
63										
62										
61										
60	18	13	15	8	10	16	12	13	10	12
59										
58										
57										
56										
55	17	12	13	7	8	14	11	12	8	10
54										
53										
52										
51										
50	15	11	12	6	7	12	9	10	7	8
49										
48										
47										
46										
45	13	9	11	5	6	10	7	8	6	6
44										
43										
42										
41										
40	12	8	9	4	4	8	6	7	4	4
39										
38										
37										
36										
35	10	6	8			6	5	5		
34										
33										
32										
31										
30	8	4	6			4	4	4		
29										
28										
27										
26										
25	6		4							
24										
23										
22										
21										
20	4									
	MS	**MD**	**MP**	**MF**	**MA**	**FS**	**FD**	**FP**	**FF**	**FA**
	____	____	____	____	____	____	____	____	____	____

CURRICULUM VITAE

Tony Michael

PhD, LPC-S, ACS, RPT
aamichae@olemiss.edu

EDUCATION

THE UNIVERSITY OF MISSISSIPPI, University, Mississippi 2014
Doctorate of Philosophy in Counselor Education and Supervision
Emphasis: Clinical Mental Health Counseling
CACREP/SACS accredited

Dissertation Topic: The Adult Scale of Parental Attachment-Short Form: Item Selection, Factor Structure, and Psychometric Properties.

DALLAS THEOLOGICAL SEMINARY, Dallas, Texas 2006
Master of Arts in Biblical Counseling
ATS/SACS accredited

GEORGIA STATE UNIVERSITY, Atlanta, Georgia 2003
Bachelor of Social Work
CSWE/SACS accredited

LICENSURES & CERTIFICATIONS

Licensed Professional Counselor in the State of Mississippi #1661	5/12 – Pres.
Mississippi Board Qualified Supervisor #222	3/14 – Pres.
Licensed Professional Counselor in the State of Texas #62605	6/08 – Pres.
Licensed Professional Counselor intern in the State of Texas #62605	10/06 – 6/08
Approved Clinical Supervisor #ACS01582	10/13 – Pres.
MS Blue Cross Blue Shield Provider #152167	10/13 – Pres.
Registered Play Therapist #T-2336	12/13 – Pres.
Certification as an Ordained Minister at Chase Oaks Church	5/06
Certification as an Ordained Minister at Grace Bible Church	9/13
National Certified Counselor #331185	In submittal

AREAS OF EXPERTISE & SCHOLARSHIP INTERESTS

Patterns of Relating & Attachment Styles
Play Therapy & Adolescent Therapy

Child-Parent Relationships
Marriage & Family Therapy
Counseling Skills & Supervision
The Use of Factor Analysis in Instrument Development

PUBLICATIONS

Young Gast, T., Michael, T., Eskridge, T., Hermann, K., & Turnage-Butterbaugh, I. (2014). Does a course in wellness education assist undergraduate students on academic probation in college success? *The Journal of College Orientation and Transition*.

Michael, T. (2013). Anxiety disorders and treatment strategies for college students. In Suzanne Degges-White & Christine Borzumato-Gainey (Eds.), *College Student Mental Health Counseling: A Developmental Approach.* New York, NY: Springer Publishing Company.

Michael, T., Turnage-Butterbaugh, I. S., Reysen, R. H., Hudspeth, E., & Degges-White, S. (2012). When learning is "different": Readin', writin', 'rithmetic, and giftedness? In Suzanne Degges-White & Bonnie Colon (Eds.), *Counseling Boys and Young Men.* New York: Springer Publishing Company.

PUBLICATIONS IN REVIEW

Stoltz, K. B., Wolff, L. A., Michael, T., Monroe, A. E., & Eskridge, T. (in review). Protean/boundaryless career attitudes: Do teachers candidates have these?

Michael, T., & Rogers, H. (in review). Erase and Replace Technique. In Suzanne Degges-White & Christine Borzumato-Gainey (Eds.), *Expressive Arts Interventions for School Counselors.* New York, NY: Springer Publishing Company.

PUBLICATIONS IN PROGRESS

Michael, T., & Snow, M. S. (in progress). The Adult Scale of Parental Attachment-Short Form: Item Selection, Factor Structure, & Psychometric Properties.

Stoltz, K. B., Wolff, L. A., Monroe, A. E., Mazahreh, L., & Michael, T. (in progress). Personality predictors of career adaptability in elementary school teacher candidates.

PROFESSIONAL PRESENTATIONS

International
Young, T., Michael, T, & Butterbaugh-Turnage, I. (2013, March). Are they really learning?: Empirically based training in motivational interviewing. Presented at the American Counseling Association (ACA) Conference in Cincinnati, OH.

Gregston, M., & Michael, T. (2009, September). Role of mother and father parenting in out-of-control teens. Presented at the American Association of Christian Counselors (AACC) Conference in Nashville, TN.

National

Hermann, K. M., Michael, T., Phipps, R., & Miller-Roach, K. (2013, October). Talking the talk: Texting, typing, and communicating in the 21st century classroom. Association for Counselor Education and Supervision Annual Conference, Denver, CO.

Miller-Roach, K., Eskridge, T., Michael, T., & Phipps, R. (2012, September). Teaching and learning clinical supervision utilizing article critiques. Presented at the Association for Creativity in Counseling (ACC) Conference in Memphis, TN.

State

Michael, T. (2013, November). Application of play therapy in mental health and school settings. Mississippi Counseling Association (MCA) Annual Conference, Jackson, MS.

Michael, T. (2013, November). An overview of child-parent relationship training. Mississippi Counseling Association (MCA) Annual Conference, Jackson, MS.

Michael, T., Mazahreh, L., & Eskridge, T. (2013, November). Protean/boundaryless career attitudes: Do teacher candidates have these? Mississippi Counseling Association (MCA) Annual Conference, Jackson, MS.

Mazahreh, L., Michael, T., & Eskridge, T. (2013, November). Coping resources among teachers-in-training.. Mississippi Counseling Association (MCA) Annual Conference, Jackson, MS.

Workshops

Snow, M. S., & Michael, T. (2013, November). Behavioral issues in the classroom: How to respond. Presented by the Child Advocacy and Play Therapy Institute in Oxford, MS.

Michael, T., Eskridge, T., Phipps, R., Miller-Roach, K., & Parker-Smith, L. (2012, July). Trauma-informed practice workshop. Presented by the Child Advocacy and Play Therapy Institute in University, MS.

Invited Presentations & Training

Michael, T. (2013, August). Professional Orientation. Presented to the counselor education doctoral students at The University of Mississippi's COUN 687: Seminar in Special Problems Course.

Michael, T. (2013, June). Somatoform disorders. Presented to the counselor education graduate students at The University of Mississippi's COUN 674: Diagnostic Systems of Counseling Course Online.

Michael, T. (2012, April). Trauma-informed practices with children and adolescents. Presented to the counselor education graduate students at The University of Mississippi's COUN 686: Counseling Children and Adolescents Course.

Michael, T. (2011, June). Therapeutic metaphors. Presentation for continuing education hours for counseling staff at Heartlight Ministries.

Michael, T. (2010, January). Counseling adolescents. Presented to undergraduate psychology students at LeTourneau University's PSYC 3203: Marriage and the Family Course.

Michael, T. (2010, January). Integration of psychology and spirituality. Presented to undergraduate psychology students at LeTourneau University's PSYC 4713: Senior Seminar Course.

Michael, T. (2010, June). Holistic treatment approach. Presentation for continuing education hours for residential staff and counselors at Heartlight Ministries.

Michael, T. (2010, June). Family counseling techniques. Presentation for continuing education hours for counseling staff at Heartlight Ministries.

Michael, T. (2010, June). Psychotropic medication training. Presentation for continuing education hours for residential and counseling staff at Heartlight Ministries.

Michael, T. (2010, June). Counseling techniques based on Heartlight's level system. Presentation for continuing education hours for counseling staff at Heartlight Ministries.

Michael, T. (2009, June). Individual and group counseling techniques that promote self-esteem in adolescents. Presentation for continuing education hours for residential staff and counselors at Heartlight Ministries.

Michael, T. (2008, February). Adolescent development. Presented at Heartlight Ministries' Families in Crisis Conference in Longview, Texas.

Michael, T. (2007, February). Adolescent development. Presentation for continuing education hours for residential staff and counselors at Heartlight Ministries.

PROFESSIONAL SERVICE

2014, April. Search committee member for the doctoral interviews in the Counselor Education program at The University of Mississippi.

2014, March. Assisted in the admission interviews for the Masters in Counselor Education program at The University of Mississippi.

2014, March. Assisted in the professor interviews for the Counselor Education program at The University of Mississippi.

2014, February. Developed the assessment rubrics for the Ed.S. program in Play Therapy for The University of Mississippi.

2013, September. Search committee member for the Operations Supervisor of Health Services at The University of Mississippi.

2013, January—May. Contributed to the arrangement and development of The University of Mississippi's recertification for CACREP accreditation. Developed a new assessment tool to assist in the appraisal of CACREP skills for program evaluation.

2013, March. Proctor for the Master's comprehensive exams for the Counselor Education program at The University of Mississippi.

2013, March. Assisted in the admission interviews for the doctoral program in Counselor Education at The University of Mississippi.

2013, February. Served as a liaison for the Counselor Education department at The University of Mississippi's Graduate Information Forum in Tupelo.

2012, April. Assisted in the admission interviews for the Masters in Counselor Education program at The University of Mississippi in Oxford and Tupelo.

2012, March. Assisted in the admission interviews for the doctoral program in Counselor Education at The University of Mississippi.

2012, February. Proctor for the Master's comprehensive exams for the Counselor Education program at The University of Mississippi.

2011, October. Developed grading rubrics for the doctoral comprehensive exams in Counselor Education & Supervision at The University of Mississippi.

TEACHING & INSTRUCTION EXPERIENCE

Course Instructor - The University of Mississippi

COUN 686	Children and Adolescents	Spring 2014

Graduate Classes Co-Taught – The University of Mississippi

COUN 601	Lifespan Development (online)	Summer 2013
COUN 601	Lifespan Development (online)	Summer 2013
COUN 650	Family Therapy	Spring 2013
COUN 690	Counseling Skills	Fall 2012
COUN 593	Topics in Counseling (hybrid)	Fall 2012
COUN 594	Play Therapy (hybrid)	Summer 2012
COUN 690	Counseling Skills	Summer 2012
COUN 674	Diagnostic Systems in Counseling (online)	Summer 2012

Teaching/Grading Assistant & Practicum Supervisor

COUN 772	Current Theories in Play Therapy (online)	Spring 2014
COUN 780	Practicum in Play Therapy	Spring 2014
COUN 784	Advanced Counseling Theory	Fall 2013
COUN 693	Practicum	Spring 2012
EDHE 202	Fundamentals of Learning	Spring 2012
EDHE 101	Contractual Readmission	Spring 2012
COUN 693	Practicum	Fall 2012
EDHE 202	Fundamentals of Learning	Fall 2012
EDHE 101	Contractual Readmission	Fall 2012
COUN 643	Group Procedures	Spring 2012
EDHE 202	Fundamentals of Learning	Spring 2012
COUN 693	Practicum	Fall 2011
EDHE 202	Fundamentals of Learning	Fall 2011

GRANTS, AWARDS, & HONORS

Association of Counselor Education & Supervision Emerging Leader Fellow	2013
Awarded a Graduate Assistantship from The University of Mississippi	8/11 – Pres.
Awarded the Student Development Grant by The University of Mississippi	2013
Honored a Travel Award by The University of Mississippi	3/13; 10/13; 11/13
Awarded a Research Assistantship from The University of Mississippi	5/13 – 8/13
Graduated with Honors from Dallas Theological Seminary	5/06
Awarded an Educational Scholarship from Dallas Seminary	8/03 – 5/06
Graduated with the Cum Laude Honor from Georgia State University	5/03
Dean's List at Georgia State University	SP01/SU01/FA01/SP02/FA02/SP03
Recognized as a Faculty Scholar at Georgia State University	SU01 & FA02
Honored the Georgia Board of Regents Study Abroad Scholar Award	11/02
Awarded the Hope Scholarship at Georgia State University	8/99 – 5/03

CLINICAL EXPERIENCE

CHILD ADVOCACY AND PLAY THERAPY INSTITUTE AT THE UNIVERSITY OF MISSISSIPPI, CLINICAL DIRECTOR
University, Mississippi ***8/13 – Pres.***
Clinical supervisor for counseling and play therapy staff
Child-parent relationship training instructor
Adult Attachment Interviewer
Intake therapist for new clients
Play therapist for children (e.g., trauma, grief, divorce, abuse, aggressive behaviors, etc.)
Individual counselor for adolescents (e.g., self-esteem, emotion regulation, conflict, etc.)
Sibling play therapist (emphasis on communication and behaviors between siblings)

CHILD ADVOCACY AND PLAY THERAPY INSTITUTE AT THE UNIVERSITY OF MISSISSIPPI, LICENSED PROFESSIONAL COUNSELOR & PLAY THERAPIST
University, Mississippi ***11/12 – 8/13***
Play therapist for children (aggressive behaviors, abuse, trauma, etc.)
Individual counselor for adolescents (sexual abuse, parental conflict, etc.)
Parenting consultant for adoptive parents
Child-parent relationship training instructor

THE UNIVERSITY OF MISSISSIPPI, GRADUATE ASSISTANT & LICENSED PROFESSIONAL COUNSELOR
Tupelo & University, Mississippi ***8/11 – 8/13***
Co-Managed the University's counseling services at the Tupelo campus
Counseled college students and faculty members
EDHE 202 advisor – helped students with academic and personal concerns
EDHE 101 advisor – assisted students with contractual readmission program
Group counselor for students at Tupelo and University campuses
Supervisor for Masters' students in practicum

HEARTLIGHT MINISTRIES THERAPEUTIC BOARDING SCHOOL, DIRECTOR OF COUNSELING SERVICES, *Hallsville, Texas* ***1/09 – 8/11***
Supervised counseling staff and provided continuing education and training hours
Organized parenting seminars
Managed psychiatrist and psychologist appointments for organization
Assisted in the interpretation of psychological testing and diagnosis for families
Oversaw psychological application and theoretical orientation for residential facility
Presented counseling theoretical application to families during family retreat weekends
Assisted with the admission process into residential program
Counseled adolescents weekly in both individual and group counseling settings

HEARTLIGHT MINISTRIES THERAPEUTIC BOARDING SCHOOL, LICENSED PROFESSIONAL COUNSELOR, *Hallsville, Texas* ***8/06 – 1/09***
Counseled struggling teens weekly in both the individual and group counseling settings

Facilitated in the psychiatric evaluations of residents
Developed therapeutic treatment plans
Served as liaison to parents and families
Directed parent support groups during weekend retreats

LIFEWORKS PRIVATE PRACTICE COUNSELING, GRADUATE INTERN
Dallas, Texas ***1/05 - 8/05***
Provided individual and marriage counseling services
Developed client charts and conducted intake interviews
Served in administrative duties, and specifically with updating computer technology
Assisted in the marketing and advertising promotion of the private practice

DEVEREAUX INSTITUTE THERAPEUTIC FOSTER CARE, UNDERGRADUATE INTERN, ***Kennesaw, Georgia*** ***8/02 - 5/03***
Developed client charts and conducted intake interviews for foster parents
Co-therapist in family counseling
Assisted with case management and documentation
Worked with children/adolescents in both individual and group counseling settings
Planned recreational activities for foster children

DEVEREAUX INSTITUTE RESIDENTIAL TREATMENT CENTER, STUDENT THERAPIST, ***Kennesaw, Georgia*** ***8/01 - 1/02***
Helped facilitate individual and group counseling for ages 8 - 21
Developed and processed client's individual charts and records
Worked with the Horizons unit/Sex offenders unit
Served as recreational advisor and facilitator
Assisted as a co-therapist in family counseling

PROFESSIONAL MEMBERSHIPS

National Memberships
American Counseling Association (Current)
Association for Counselor Education and Supervision (Current)
Association for Play Therapy (Current)
American Association of Christian Counselors (Past: 2007 - 2010)

State Memberships
Mississippi Counseling Association (Current)