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# Temperament, Attachment, and Co-parenting as Risk and Protective Factors of Depression in Young Adulthood

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TEMPERAMENT, ATTACHMENT, AND COPARENTING AS RISK AND  
PROTECTIVE FACTORS OF DEPRESSION IN YOUNG ADULTHOOD

being

A Thesis Presented to the Graduate Faculty  
of the Fort Hays State University in  
Partial Fulfillment of the Requirements for  
the Degree of Master of Science

by

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## ABSTRACT

Depression is a serious mental illness that affects millions of people. Depression can cause severe life impairment and is associated with numerous life threatening risk factors. Though treatment of depression is important, prevention is ideal. Therefore, it is important to understand associated risk and protective factors of depression. Several factors may precede the development of depression in young adulthood. This study sought to better understand the role of temperament, parent-child attachment relationships, and child reported coparenting quality on the development of depressive symptoms in young adults between the ages of 18 and 22. Previous studies have suggested that some temperament traits including negative affect, positive affect, and effortful control may be related to depression. Additionally, research has also suggested that parent child attachment is associated and predictive of depression as well. This study was also interested in how coparenting and depression are related. Coparenting is the relationship quality of how two individuals work together to raise a child, which may be supportive or undermining. Past research has shown conflicting results as to whether coparenting quality may influence the development of depressive symptoms (e.g., Feinberg et al., 2007; Forehand & Jones, 2003). However, this study expected that conflict coparenting and unsupportive coparenting would be related to depressive symptoms. Hierarchical multiple regression was used to test the hypothesis that temperament, attachment, and coparenting are each predictive of depression. Results indicated that though temperament, attachment, and coparenting are all separately correlated and predictive of depression, attachment and coparenting fail to account for additional significant variance in depression when accounting for temperament.

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## INTRODUCTION

Depression is a mood disorder that causes impairment in everyday functioning. Many people afflicted by depression exhibit decreased functioning socially and physically and in their relationship and occupational roles (American Psychological Association, 2000). According to the Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> Edition, Text Revision (DSM IV-TR), a Major Depressive Episode requires either depressed mood or loss of interest or pleasure and at least four of the following during a two week period: increase or decrease in appetite or weight, insomnia or hypersomnia, psychomotor agitation or retardation, decreased energy, feelings of worthlessness or inappropriate guilt, inability to concentrate, and recurring thoughts of death or suicide for at least two weeks (APA, 2000).

Depression is a serious and debilitating illness that impacts many people. Depression is one of the leading causes of disability worldwide (Kessler, Chiu, Demler, & Walters, 2005). Depression is also economically taxing. In the United States, Major Depressive Disorder (MDD) cost an estimated \$83 billion in 2000 (Greenberg et al., 2003). This \$83 billion includes \$26.1 billion in direct medical costs, \$51.5 billion in workplace costs, and \$5.4 billion in suicide-related costs (Greenberg et al., 2003). This cost is affected by the many people who experience depression. Over a 12-month period, about 6.7% of people in the United States suffer from MDD (Kessler et al., 2005). Additionally, approximately 16.6% of people in the United States will experience MDD in their lifetime (Kessler, et al., 2005). Demographic studies have also suggested that

women are significantly more likely to develop MDD. For example, the lifetime prevalence rate of MDD is 25% for women and 16% for men (Kessler et al., 2005).

The many people who experience depression are at risk for serious impairment and death. Roughly 15% of people diagnosed with MDD die of suicide (APA, 2000). In 2003, 41,484 people died of suicide in the United States most of who suffered from depression (Hoyert, Heron, Murphy, & Kung, 2006). People with depression are at increased risk for physical symptoms as well. For example, people suffering from depression are more likely to experience physical pain and illness than people without depression (APA, 2000). Depression is associated with other risk factors as well. Young people with depression are specifically at an increased risk for substance abuse, academic difficulties, unplanned pregnancy, and peer and family difficulties (Birmaher, Brent, & Benson, 1998; Daniels & Moos, 1990; Lewinsohn, Seeley, & Gotlib, 1997; Weissman et al., 1999). People who have had one depressive episode are also at risk for having another. For example, 60% of people who have experienced one episode of MDD will experience a second. Reoccurrence of MDD also increases with each additional episode. For example, the reoccurrence rate for those with two depressive episodes is 70%, and 90% who experience three depressive episodes will experience a fourth. Therefore, a major risk factor of MDD is reoccurrence in addition to death, physical symptoms, substance abuse, and impairment of interpersonal functioning.

MDD's significant reoccurrence rates suggest that treatment for the disorder may be best applied preventatively. In order to prevent depression, the etiology of depression

must be investigated. Therefore, many researchers have sought to identify risk and protective factors of depression. Past research has examined factors which differentiate why some adults develop depressive symptoms when exposed to psychosocial stressors while others do not. For example, researchers have studied the effects of biological factors including genetics and neurotransmitters and social factors including support systems and socioeconomic status (Levinson, 2006; Lewinsohn, 2002; Nutt, 2008). Similar to the current study, past research has also investigated the role of developmental factors including attachment, temperament, coparenting, parent-child relationships, and social effects of mental illness within the family on depression in early adulthood.

In order to discover etiological factors of depression, it is important to study depression around the age of the first onset. The average age of onset for MDD is in the mid-twenties, but research has suggested that the age of onset is continually decreasing (APA, 2000). Additionally, the onset of MDD is commonly associated with the presence of psychosocial stressors (APA, 2000). Young adulthood brings many psychosocial stressors. The focus of the current study was on young adults in the college setting. Young adults in college experience many stressors which may include moving away from family, living independently, making new friends, succeeding in a rigorous academic setting, and financial burdens. Exposure to these stressors may contribute to the onset of depression. An interest examined by the current study was how developmental factors may relate to depressive symptoms during this time.

In the present study, the relations between temperament, parent-child attachment, and child-reported coparenting quality on depressive symptoms in college students were also examined. The focus of this study was not only on which developmental factors are risk and protective factors for the development of depression during college, but also how these developmental factors relate to one another. Examining the interaction of these factors may help to better understand the process and development of depressive symptoms. Because depression is a serious mental illness which may severely and negatively impact the lives of many people, it is imperative that research investigate risk and protective factors of this disorder in order to prevent it.

This literature review will examine several factors that impact depression. First described will be temperament. Then, attachment and coparenting will also be discussed. Next the relationship between each of these factors will be examined. Methodology will then be discussed. Finally, the results of this study will be presented as well as a discussion of how these results fit with the literature.

## **Temperament**

**History of temperament.** Temperament has been studied for thousands of years. Hippocrates (460-370 BC) was one of the first to propose the idea of temperaments. However, Thomas, Chess, Birch, Hertzig, and Korn (1963) were the first to develop a modernized theory of temperament. They noticed that nurture or the environment does not solely explain psychological development. Therefore, the nature of the child is essential in understanding psychological development, specifically temperament. Upon

this emphasis of temperament, many researchers have sought to define and identify temperament.

**Defining temperament.** Researchers agree that temperament is biological in origin and affects behaviors in broad contexts (Goldsmith et al., 1987). Temperament has been defined as the individual differences in primary emotional domains (Goldsmith, Lemery, Aksan, & Buss, 2000). Specifically, it has been explained that temperament is the tendencies in how one experiences and expresses emotions. Rothbart and Derryberry (1981) said that temperament is the differences in how individuals react and self-regulate. Part of defining temperament includes distinguishing temperament from personality.

Temperament is different than personality. Temperament describes the way someone behaves in response to the world around them, whereas personality explains the abilities and motivation of behavior (Thomas & Chess, 1977). Rothbart and Bates (2006) also suggested that temperament consists of innate, dispositional attentional processes, whereas personality extends beyond that to include cognitions, beliefs, and values. Thomas and colleagues (1963) found that temperament can be measured in infancy, whereas personality characteristics are unable to be measured for a few more years. This evidence suggests that personality emerges from temperament but is also influenced by the environment. Researchers have sought to identify temperament traits that are separate from personality.

Thomas and Chess (1977) were the first to identify temperament domains. They conducted the New York Longitudinal Study in 1956 which studied traits in 133

participants in 84 families from the age of three months to adulthood. The purpose of this study was to identify basic temperament dimensions. The study suggested that there are nine dimensions of temperament which include activity level, rhythmicity or regularity, adaptability, approach/withdrawal, emotional intensity, quality of mood, persistence/ attention span, and distractibility. Activity level refers to the output of energy by the individual which can be measured by frequency and duration of movement. Regularity/rhythmicity refers to the predictability of an individual's biological functions. For example, does the individual eat and sleep at the same time from day to day? Adaptability refers to how easily an individual adapts to changes in his or her environment. Approach/withdrawal is how the individual reacts to new stimuli. Emotional intensity refers to how intensely an individual responds both positively and negatively. Quality of mood is an individual's tendency to a happy or unhappy demeanor. Attention span/ persistence is the duration an individual focuses on an activity. Finally, distractibility refers to the likelihood an individual may become sidetracked by stimuli in their environment. One study examined these nine temperament domains using factor analysis and found that there is redundancy between these dimensions (Martin, Wisenbaker, & Huttunen, 1994). Since this time, researchers have sought to modify these dimensions of temperament.

Diamond (1957) suggested that the definition of temperament domains may be contaminated by cultural influence and therefore, true temperament should be observed in animals as well. He identified four temperament domains humans share with primates

including fearfulness, aggressiveness, affiliativeness, and impulsiveness. Buss and Plomin (1984) added to Diamond's idea and said that true temperament traits should appear early, specifically within the first or second year of life, be heritable, and continue or at least be residual in later personality. Buss and Plomin (1984) identified four temperament traits that met their criteria: emotionality, activity, sociability, and impulsivity. Evans and Rothbart (2007), who have developed several temperament measures, chose to identify temperament domains that correlate with personality traits because temperament precedes and influences the development of personality. These temperament traits include effortful control, negative affect, extraversion/surgency, and orienting sensitivity. Effortful control consists of attentional control, or the ability to shift attention, inhibitory control, or the ability to suppress behavior, and activation control, or the ability to initiate activity when there is a tendency to avoid it. Negative affect consists of fear, sadness, discomfort, and frustration. Extraversion/surgency includes sociability, positive affect, and high intensity pleasure. Orienting sensitivity consists of the following traits: neutral perceptual sensitivity, or awareness of minute, neutral stimuli within one's body and in the environment, affective perceptual sensitivity, or awareness of emotions to low intensity stimuli, and associative sensitivity, or spontaneous cognitions not normally associated with environmental stimuli. The current study used Evans and Rothbart's Adult Temperament Questionnaire (2007) which identifies the aforementioned temperament domains.



**Heritability and stability of temperament.** Beyond identifying temperament traits, researchers have sought to understand the influences of temperament. For example, a sibling adoption study's data was compared with data from a twin study to better understand the genetic heritability of temperament (Braungart, Plomin, DeFries, & Fulker, 1992). The results of their study showed that approximately 35% to 57% of individual temperament traits were found to be accounted for by genetics. The Braungart et al. (1992) study, therefore, further suggests that the expression of temperament may be influenced by environmental factors as well. Consequently, the stability of how temperament is expressed may be altered over time and experience. Even temperament measured in infants may have already been influenced by environmental factors in utero and after birth. Thomas et al. (1963) first measured stability of temperament in their longitudinal study and found temperament to be significantly stable in the first five years of life and moderately stable later in life. Other studies have suggested temperament remains fairly stable all the way through adolescence (Guerin & Gottfried 1994). Further, Roberts, and Delvecchio's research (2000) showed that temperament and personality are moderately stable after age 3 until early adulthood, at which time temperament and personality become quite stable. Therefore, research suggests that temperament remains moderately stable through the lifespan, although some variability exists, probably due to environmental influences. Consequently, temperament in early life may be predictive of future development of personality and adjustment.

**Combinations of temperament traits.** Studies have also begun to examine how temperament traits relate with each other. Research has suggested that combinations of temperament traits may be more effective in predicting outcomes including personality and behavioral and emotional adjustment. For example, Rothbart and Bates (2006) found that the temperament trait effortful control played a larger role in predicting prosocial behavior in the context of the trait negativity. Specifically, effortful control is more predictive of prosocial behavior in children who showed high negativity than children with low levels of negativity.

Thomas and Chess (1977) were the first to discuss how combinations of temperament traits may be classified. These combinations of temperament traits were determined by factor analysis and the most clinically significant combinations of temperament traits. They identified three temperament categories which fit these requirements: difficult, slow to warm, and easy or flexible. The traits of easy or flexible temperament types include positive mood, regular sleeping and eating habits, adaptability, and low intensity and sensitivity. Difficult temperament includes arrhythmicity, nonadaptability, fearfulness to novel stimuli, easy startle response to external stimuli, and intense reactions. Finally, the slow to warm up or fearful temperament type include traits like slow to adapt and withdrawal. In addition to temperament traits relating to one another to predict outcomes, temperament traits also interact with the environment.

**The relationship between temperament and the environment.** Most research examines both nature and nurture due to the inseparable nature between the two. Therefore, it is not surprising that a number of studies have examined the relationship between temperament and the environment. For example, research has shown that adjustment outcomes depend more on the relationship between temperament traits and the environment than solely one or the other. Kochanska (1997) found that the adjustment outcome for the temperament trait fearfulness was dependent on the parenting context. Children high in fearfulness better develop internalized self controls when they are warmly controlled by their mothers as opposed to being harshly controlled or not controlled by their mothers. Conversely, children low on fearfulness better develop self controls when raised by mothers who are less controlling (Kochanska, 1997). Research has also suggested that the environment children are raised in is far more important for children with vulnerable temperaments. Not only are children with vulnerable temperaments more negatively affected by adverse environments, they are also more positively affected by supportive environments. A focus of the current study was how temperament traits relate with environmental factors in the family context.

**Effects of temperament.** Temperament has been widely studied in relation to adjustment and maladjustment. Many researchers have focused their research on how temperament predicts adjustment. For example, Maziade (1989) found that adverse temperament traits can be a risk factor of psychopathology regardless of other risk factors. Some studies have focused on predicting the development of behavioral and

emotional problems by studying infants with difficult temperaments compared to infants with easy temperaments (Guerin, Gottfried, & Thomas, 1997; Thomas et al., 1963).

Other research has focused on the role of temperament on adjustment in children and adults.

***Emotional regulation.*** Research examining the role of temperament on adjustment has focused largely on the relationship between temperament and emotional regulation. For example, a longitudinal study was conducted which assessed temperament at four months of age and outcomes at age seven (Kagan, Snidman, Zentner, & Peterson, 1999). They found that 20% of infants were categorized as highly reactive which means they exhibited crying and motor activity in the presence of unfamiliar stimuli and 40% were considered low-reactive showing minimal crying and activity in the presence of the same stimuli. At age 7, the infants classified as high-reactive were three times more likely to show anxiety symptoms than those in the low-reactive group (Kagan et al., 1999). Another study found that adolescents who were classified as high-reactive infants have also reported more sadness and bodily reactions like changes in heart rate, sweating palms, flushing, and increased blood pressure than adolescents who were classified as low-reactive infants (Kagan, Snidman, Kahn, & Towsley, 2007). Other research has identified that the temperament traits, strong approach or positive emotionality and/or weak effortful control in early years predict externalizing behaviors later in life. The traits, fearfulness and inhibition found early in life have been shown to predict internalizing problems later in life. Negative

emotionality and irritability predict both internalizing and externalizing behaviors and may be traits which predict comorbidity of internalizing and externalizing behaviors (Keiley, Lofthouse, Bates, Dodge, & Pettit, 2003). Tubman and Windle (1995) found that children with difficult temperaments were more likely to use substances in adolescence. Another study found a correlation between temperament traits and Oppositional Defiant Disorder in three year olds (Dougherty et al., 2011). Also, because we know temperament plays an important role in the development of personality, it is not surprising that some research has found connections between some temperament traits and personality disorders (Battaglia, Przybeck, Bellodi, & Cloninger, 1996). Research continues to better understand the relationship between temperament traits and later adjustment.

***Temperament and depression.*** Previous research has focused on the role of temperament on internalizing and externalizing problems. A number of these studies have implicated the importance of researching temperament, specifically, in relation to depression. For example, researchers have sought to identify temperament traits that serve as risk and protective factors of various maladjustments including depression (Tubman, Lerner, Lerner, & Eye, 1992).

***Negative affect and depression.*** Watson and Clark (1995) suggested that high levels of negative temperament traits and low positive temperament traits are most associated with maladjustment. Specifically, research has found that negative affect predicts anxiety and depression symptoms (Watson, Clark, & Harkness, 1994). Several

other studies have replicated these findings in adolescents and young adults (Lonigan et al., 2003; Oldehinkel et al., 2006). The current study used Evans and Rothbart's (2007) Adult Temperament Questionnaire (ATQ) which includes a negative affect temperament domain. For this measure, negative affect includes fear, sadness, discomfort, and frustration in response to stimuli. In other words, individuals who score high on negative activity have a tendency to react to their environment and experiences with negative emotions. Few studies have examined temperament traits from the ATQ in relation to depression. However, in the current study, it was expected that individuals with high scores on negative affect on the ATQ would be more likely to report depressive symptoms than those with low levels of negative affect.

*Positive Affect and Depression.* Negative affect has not only been found to be associated with depressive symptoms but also with low levels of positive affect (Watson, Clark, & Harkness, 1994). Another study identified specific positive affect traits that predict depression in adolescents including low levels of positive mood and flexibility (Betts, Gullone, & Allen, 2009). Evans and Rothbart (2007) define positive affect as the frequency, intensity, duration, and tendency to experience pleasure in reaction to one's environment. Positive affect is one scale which makes up the ATQs domain extraversion/surgency. Extraversion/surgency is also comprised of sociability and high intensity pleasure. Sociability refers to the amount of joy one experiences in response to being around others and social interaction. Research suggests that individuals who are shy or low in sociability are more likely to report depressive symptoms than those who

high in sociability (Nyman et al., 2011). Therefore, based on previous research, in the current study, it was hypothesized that young adults with low levels on the ATQ's extraversion/surgency domain, would report higher levels of depressive symptoms.

Researchers have also found an increase in depressive symptoms in children with temperaments low in effortful control (Kiff, Lengua, & Bush, 2011). Sportel Nauta, de Hulla, de Jong, & Hartman (2011) explained that depression is frequently correlated with attention problems including ADHD, oppositional defiant disorder, and conduct disorder. Therefore, traits related to attention control may not only predict behavior problems but also depression. Sportel and colleagues (2011) found that low levels of attentional control, a subtype of effortful control on the ATQ, specifically relate to depressive symptoms in young adulthood. One interest of this study was how effortful control relates to depression which includes the trait attentional control. Therefore, in this study, it was hypothesized that young adults with low levels of effortful control would report higher levels of depression. Additionally, adolescents with low levels of effortful control would also report higher levels of depression.

**Temperament and the current study.** The current study also sought to better understand the relationship between temperament and depressive symptoms in young adulthood. Evans and Rothbart's Adult Temperament Questionnaire (2007) was used to identify traits that are risk and protective factors of depression in young adulthood. Further, one purpose of this study was to better understand how temperament relates to other developmental factors in predicting adjustment. Many temperament researchers

have suggested using parenting interventions in dealing with children with specific temperament traits. One hope of this study was to contribute to the aforementioned research by identifying ways in which temperament influences depression later in life and how temperament may influence attachment relationships and coparenting interactions which may also contribute to psychopathology in young adulthood.

### **Attachment**

**Attachment Theory.** Attachment Theory was first developed by Bowlby in the 1960s which described the bond between infants and their caregivers (Bowlby, 1980). Bowlby (1980) suggested that attachment is primarily evolutionary. It is imperative that infants seek attachment with their caregiver for survival since they are unable to care for themselves. Infants innately seek proximity to their caregivers in times of discomfort or distress in order to meet their survival needs, and attachment is thus crucial to natural selection (Bowlby, 1980). Additionally, infants are able to adapt their attachment behavior based on their observations of their caregiver based on their early experiences (Bowlby, 1980).

Bowlby (1980) suggested that within the first year of life, infants make observations about how their caregivers respond to them which are used to develop a model for future interactions known as the Internal Working Model, IWM. The IWM includes schemas about oneself and others. For example, the IWM includes self-perceptions about whether a child views herself as lovable as well as expectations about



caregivers' responsiveness. This model acts as a guide to develop interaction strategies to meet infants needs from their caregiver (Bowlby, 1980).

Infants regulate their attachment behaviors based on their IWM which is based on the observed availability and responsiveness of their caregiver to their needs. For example, if infants perceive their caregiver is consistently available and responds with warmth to their needs, they develop a secure attachment relationship with their caregiver and IWM (Ainsworth, Blehar, Waters, & Wall, 1978). Ainsworth and her colleagues (1978) first observed that securely attached infants played comfortably in the presence of their caregiver, using them as a secure base. These same infants became distressed when separated from their caregiver but sought their caregiver and easily calmed upon reunion, using the caregiver as a safe haven. However, children with anxious-avoidant attachment styles typically have parents who fail to respond to their needs. Therefore, these children learn to repress their emotions and sooth themselves (Ainsworth et al., 1978). In the Strange Situation, insecure-avoidant infants are indifferent toward their caregivers. When insecure-avoidant infants are separated from their caregiver, they become upset but may be easily calmed by a stranger rather than their caregiver. Parents with an insecure-resistant, or preoccupied, child, give inconsistent attention to the child. These children have difficulty understanding and trusting whether their caregiver will respond to their needs (Vivona, 2000). Insecure-resistant infants are fussy in the presence of their caregivers. After being separated from their parents they resist comfort from their caregivers. Main and Solomon (1986) added a fourth type of insecure attachment,

disorganized, which describes infants who show no clear attachment type. These attachment styles continue to be used in research today. The type of attachment relationship developed with the caregiver in the first year is typically thought to be responsible for the quality of later caregiver-child bonds (Bowlby, 1973).

This first attachment relationship is also often believed to serve as a developmental template for future psychosocial adjustment. For example, interpersonal and intrapersonal functioning tends to remain stable from this time (Bowlby, 1973). This early developed IWM also affects how relationships are appraised and experienced and frequently the outcome of future relationships (Bowlby, 1982). For example, Hazan and Shaver (1987) found that adults in romantic relationships exhibit similar attachment features to infant attachment. They described that securely attached adults reported it was relatively easy to get close to their romantic partner without fear of abandonment. Meanwhile, insecurely attached adults reported either feeling that their partners would not get as close as they would like or that they were uncomfortable with how close their partner was to them. Bowlby (1973) noted that though the IWM and attachment relationships tend to remain consistent throughout the lifespan, the IWM is capable of change when significant events disconfirm one's current IWM.

**Effects of attachment.** Many attachment studies have sought to understand the effects of early attachment relationships on future adjustment. Generally, studies have concluded that those with early secure attachment styles exhibit healthy interpersonal and intrapersonal functioning. Conversely, those with insecure attachment styles in early

relationships are more likely to have difficulty with interpersonal and intrapersonal adjustment.

***Emotional regulation.*** The effects of attachment relationships seem to appear almost immediately. Research has suggested that attachment security may be responsible for negative attitudes about the environment and emotional regulation in toddlerhood. Infants and toddlers are unable to manage their emotions on their own. Therefore, caregivers are necessary to help regulate these emotions and are the foundation for emotional regulation (Fury, Carlson, & Sroufe, 1997; Kochanska, 2001). For example, insecure infants show an increase in negative emotions and increased distress in situations meant to elicit joy through toddlerhood. Also, infants with insecure attachments are more fearful and view the world as harsher than secure infants (Kochanska, 2001). These negative views are thought to continue into later emotional regulation (Kerns, Klepac, & Cole, 1996).

Many studies have also suggested that problems with emotional regulation in childhood are also related to early attachment relationships. For example, children with an insecure, preoccupied attachment display high levels of anxiety and low levels of self-confidence (Kobak and Sceery, 1988). These feelings of anxiety and lack of self-esteem continue throughout childhood and into adolescents where they withdraw socially due to fear of rejection and inadequacy (Finnegan, Hodges, & Perry, 1996). Insecurely attached, preoccupied adolescents tend to be irritable and impulsive, have behavior problems, and have a decreased ability to deal with stress (Cozolino, 2006). Insecure,

avoidant attachment is most predictive of depression (Bosquet & Egeland, 2006).

Insecure avoidant young adults exhibit decreased emotional expression, have a lower resting heart rate, engage in little physical activity, and are more likely to be unmotivated and sad (Cozolino, 2006). Parent-child attachment effects emotional regulation throughout development, but it also effects interpersonal functioning as well.

Hundreds of attachment studies have examined the importance of attachment on social development. Bowlby (1980) was one of the first to suggest that parent-child attachment appears to remain stable throughout the lifetime, but later research also suggested that parent-child attachment extends to other attachment relationships throughout the life (Kerns & Stevens, 1996; Rice, Cunningham, & Young, 1997; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). Studies have shown a relationship between parent-child attachment and social functioning in adolescents (Kerns & Stevens, 1996; Rice et al., 1997). For example, more secure parental attachment relations were found to predict better social skills in adolescents over the age of 15 while less secure levels of attachment predicted problems with social skills (Engels, Finkenauer, & Meeus, 2001). Additionally, Gallo and Matthews (2006) observed that attachment style seems to affect adolescents physiologically during social situations. When monitoring the blood pressure and heart rate of 14 to 16 year olds with their close friends, they found that insecure-avoidant adolescents had increased blood pressure and heart rate but only when in conflict with friends. Differently, insecure-preoccupied adolescents showed consistent increased heart rate and blood pressure whenever interacting with friends (Gallo &

Matthews, 2006). The social implications that parent-child attachment has on social factors may lead to further problems too. For example, as a child gets older, the focus of relationships shifts from parent-child relationships to relationships with peers and romantic partners. Consequently, the ability to function in healthy peer and romantic relationships affects emotional well-being (Engels et al., 2001). Therefore, the effects of early attachment relationships not only effect social adjustment but also emotional well-being later in life.

Many research studies have examined the relation between attachment and internalizing problems. These studies have suggested that insecure attachment styles are more likely to be associated with internalizing problems than secure relationships (Roelofs, Meesters, Huurne, Bamelis, & Muris, 2006; Rönnlund & Karlsson, 2006). Specifically, insecure-disorganized and preoccupied attachment styles are the most likely to are predict internalizing problems (Adam, Sheldon-Keller, & West, 1996; Cooper, Shaver, & Collins, 1998; Warren, Huston, Egeland, & Sroufe, 1997). For example, Warren and colleagues (1997) found that infants with anxious attachments were more likely to develop anxiety disorders at age 17.5. Also, Feres (2010) found that mother-child attachment in adolescence is predictive of depressive symptoms two years later. Additionally, father-child attachment predicts anxiety symptoms two years later. Further, young adults with more secure attachment to both their mother and father reported higher self-esteem and a lower frequency of depressive symptoms than those who were less

attached to their parents (Feres, 2010). Overall, research has suggested that attachment relationships may predict emotional-adjustment.

The effects of attachment are broad. Research has suggested that early attachment relationships impact future functioning beginning as early as infancy and continuing into adulthood. Early attachment relationships have associated with emotional regulation, social functioning, and emotional adjustment. Therefore, early secure attachment relationships are essential to healthy development.

*Attachment and depression.* Ainsworth and Bowlby (1991) were the first to suggest that the attachment may contribute to healthy development or psychopathology including depression. Early attachment relationships lead to the development of cognitions and schemas which then influence development and potentially psychopathology. Many other studies have supported relationship between attachment and depressive symptoms. For example, one study found that less secure attachment in adolescence is associated with clinical depression and self-reported depressive symptoms (Armsden, McCauley, Greenberg, Burke, & Mitchell, 1990). Many studies that have examined attachment in adolescence have focused on peer attachment. However, an interest of the current study was the child's attachment with each parental figure in relation to depression. Low attachment security with parent figures seems to predict depressive symptoms in adolescence. A research study conducted by Feres (2010) has supported this idea. It was found that adolescents with low attachment security with their mothers were more likely to develop depressive symptoms two years later. Low

attachment security was also predictive of anxiety symptoms two years later but not depression. Based on this research, in the current study, it was hypothesized that adolescents with insecure attachment qualities with their parent figures will report higher levels of depressive symptoms.

Conversely, more secure child-parent attachment relationships protect against depressive symptoms. Adolescents with secure attachment relationships with their parents report less loneliness and hopelessness which are symptoms of depression (Armsden and Greenberg, 1987). Adolescents with secure attachment also exhibit better problem-solving and coping strategies, and show a less external oriented locus of control which relate to healthy adjustment (Armsden et al., 1990). Therefore, it was hypothesized that adolescents with better attachment with their parents would have fewer depressive symptoms than those with insecure attachments.

**Attachment measures.** There are many methods for measuring attachment. Early attachment research was interested in the development of attachment and therefore, early attachment measures focused on how to measure early attachment relationships. Ainsworth's Strange Situation (Ainsworth et al., 1978) was the first attachment measurement and was initially developed to measure the attachment relationship between infants and their mothers. The Strange Situation included video recording and later coding a set of separations and reunions between infants and their mothers. Based on these interactions, coders determine attachment style between the infant and mother. Since then, studies have begun to look at attachment relationships between the infant and

other caregivers as well, especially fathers (Suess, Grossmann, & Sroufe, 1992). When developing measures for attachment beyond infancy, some researchers chose to create measures to examine attachment styles not only with parents but also peers and romantic partners (Armsden & Greenberg, 1987; Hazan & Shaver, 1987). These attachment relationships have been measured by observation, coded interviews, and self-report which have all shown good reliability and validity (Ainsworth et al., 1978; Armsden & Greenberg, 1987; George, Kaplan, & Main, 1985). Research has suggested that there are many ways to measure attachment and many types of relationships that attachment can be measured from.

Ainsworth and colleagues (1978) first measured attachment with infants and mothers, but many subsequent attachment researchers began to develop measures which could measure child attachment to both parents. However, several studies have encouraged separate assessment for attachment with the mother and father (McCarthy, Moller, & Fouladi, 2001). Research has suggested that attachment with mothers and fathers tend to be correlated. For example, those who report stronger attachment with their mothers also tend to report stronger attachment to their fathers (Ross & Fuertes, 2010). However, Ross and Fuertes (2010) found differences between the influences of young adults' attachment with their mothers and fathers. For instance, father-child attachment predicted social skills but not conflict resolution, and mother-child attachment predicted the inverse. Therefore, it may be important to assess mother-child attachment



separately from father-child attachment since they may be important to development in different ways.

***Measuring attachment in young adulthood.*** Kenny (1987) suggested that college represents a type of Strange Situation. For example, college students leave home and experience a variety of psychosocial stressors and adjustment including relocation, the development of new friendships and intimate relationships, academic and financial responsibilities and stress, and overall autonomous functioning. During this time of independence and psychosocial stressors, parents serve as a safe haven when college students become overwhelmed or distressed. The parent-child attachment relationship also serves as a secure base. In other words, this relationship encourages students to feel comfortable exploring their identities and the world around them. Therefore, parent-child attachment in the lives of young-adult college student may strongly influence college adjustment and well-being during this time. This research suggests that college is a unique developmental phase to measure attachment since the parent-child attachment relationship during this time is so important.

**Attachment and the current study.** Past research indicates that attachment can be measured in many ways. The current study used the Inventory of Parent and Peer Attachment-Revised (IPPA-R) to examine the attachment relationship of young-adults with their caregivers. Previous research suggested that attachment with caregivers be assessed independently, and the IPPA-R allows for this. Further, it has been suggested that the subscales of the IPPA-R measure components of how the child perceives their

parents as a secure base and as a safe haven (Mattanah, Lopez, & Govern, 2011) which compliments Kenny's proposal that the college experience represents a Strange Situation which is a unique situation during which to measure attachment. A meta-analysis of young adult attachment and adjustment suggests that attachment only mild to moderately predicts adjustment. Therefore, in the current study, it was examined how other developmental factors may relate with attachment and depression.

### **Coparenting**

**Defining coparenting.** Researchers only began studying coparenting about a decade ago (Van Egeren & Hawkins, 2004). Initially, the term coparenting was used to describe the relationship between divorced couples who continued to share parenting responsibilities (Ahrons, 1981; Maccoby, Depner, & Mnookin, 1990). However, the term coparenting is now defined by the relationship quality of how two individuals work together to raise a child or the way two people work together in their roles as parents (Feinberg, 2003; Talbot & McHale, 2004). The coparenting relationship is thought to first develop at the birth of the first child. However, some research has suggested that this relationship may begin as early as pregnancy when parents begin to assume their roles as parents and collaborate in decision making about their expected child (Feinberg, 2003; Van Egeren & Hawkins, 2004).

Early coparenting studies have focused on traditional parenting relationships: married heterosexual couples with a child. Researchers focusing on these relationships sought to distinguish coparenting relationships from marital relationships. Research has

suggested that coparenting differs from marital quality because coparenting relationships refer to how two people relate to one another in their role as parents, and the focus is on issues about raising the child. Marital quality, on the other hand, focuses on a variety of other issues outside of the child including financial, sexual, and romantic relations (McHale, 2007). Another distinction between coparenting and marital quality is that they can exist without the other. The marriage relationship can exist before a couple becomes parents and coparenting relationships can continue when a marriage resolves (Schoppe-Sullivan, Mangelsdorf, Frosch, & McHale, 2004). However, coparenting and marital quality seem to relate and influence one another (McHale & Fivaz-Depeursinge, 1999; Schoppe-Sullivan et al., 2004). Studies have found that coparenting and marital quality significantly correlate. This correlation is only mild to moderate, ranging from .01 to .60 with an average correlation of .20 (Abidin & Brunner, 1995; McConnell & Kerig, 2002; Schoppe-Sullivan et al., 2004; Van Egeren, 2004). Research has also suggested that coparenting acts as a mediator between marital conflict and parenting (Margolin, Gordis, & John, 2001). Research has also suggested that coparenting affects child adjustment distinct from marital quality and other parenting subsystems (Feinberg, 2002; Stright & Neitzel, 2003). For example, Feinberg (2002) found that coparenting better predicts child outcomes than marital quality. This may be because research has found that children are more affected by marital disagreements about parenting than other types of marital disagreements not regarding the child. Therefore, research interested in the affects of

parental relationships on child adjustment should distinguish coparenting from overall marital quality.

Some studies have also begun to suggest that coparenting relationships may exist outside of traditional mother and father families (Jones & Lindahl, 2011; Shook, Jones, Forehand, Dorsey, & Brody, 2010; Sterrett, Jones, Forehand, & Garai, 2010). Several studies have begun to include different variations of unmarried couples (i.e. divorced couples, unmarried, cohabitating couples, etc.). Coparenting research has even expanded to include coparenting relationships in single-parent homes. For example, Jones and Lindahl (2011) suggested that single mothers may not coparent with the child's father, but usually coparent with someone. These coparenting relationships tend to be between the mother and another family member, friend, neighbor, etc. (Jones & Lindahl, 2011; Shook et al., 2010; Sterrett et al., 2010). However, a gap in the literature continues to exist when examining coparenting relationships outside of traditional families. One intent of the current study was to add to the research by using a broad definition of coparenting that includes relationships between any two individuals who share parenting responsibilities.

**Dimensions of coparenting.** When defining coparenting, it is important to identify dimensions of coparenting. Some research has focused solely on the negative or conflict components of coparenting (Feinberg et al., 2007; Forehand & Jones, 2003; Ross & Fuertes, 2010). These negative components may include angry interactions, dislike for one's partner, ignoring or snubbing one's partner, and undermining behaviors. Many

researchers have identified undermining as an important trait of coparenting (McHale, 1997; Van Egeren & Hawkins, 2004). Van Egeren and Hawkins (2004) suggest that undermining coparenting happens when one partner attempts to overtly or covertly prevent their partner from accomplishing their parenting goals and criticizes their parenting decisions. Competitive coparenting has also been studied and includes verbal and physical behavior used to intrude on one partner's interaction with the child (McHale, Kazali, Rotman, Talbot, Carleton, & Lieberman, 2004).

Other research has included supportive or cooperative aspects of coparenting. Supportive or cooperative coparenting is defined by reinforcing one's partner's parenting goals (Belsky Crnic, & Gable, 1995; Van Egeren & Hawkins, 2004). Supportive or cooperative coparenting relationships are frequently described as respectful, interactive, or communicative. Parenting partners in with these traits seem to have good teamwork in their roles as parents as well (McHale et al., 2004). Other components of supportive or cooperative coparenting include pleasure and warmth (Weissman & Cohen, 1985). Pleasure refers to the amount of positive interactions shared between partners when parenting. Warmth includes the sense of connection shared by the partners and positive affect (Weissman & Cohen, 1985; McHale et al., 2004). In the current study, coparenting was examined by measuring both supportive and undermining aspects of coparenting in order to identify both risk and protective factors of depressive symptoms.

**Measuring coparenting.** Previous research has assessed coparenting quality through a variety of means. Some studies have observed parenting interactions and used

coding scales to measure aspects of coparenting quality (Brown, Schoppe-Sullivan, Mangelsdorf, & Neff, 2010; McHale, Kuersten-Hogan, Lauretti, & Rasmussen, 2000). Other studies have focused on parent self-reports of their coparenting relationship (Feinberg et al., 2007; Forehand & Jones, 2003). However, few studies have examined the child's perception of their parent's coparenting relationship and even fewer have focused on supportive as well as undermining components of coparenting (Ross & Fuertes, 2010; Stright & Bales, 2003). Also, research has mostly focused on measuring these relationships during infancy and early childhood (Belsky, Putnam, & Crnic, 1996; Schoppe-Sullivan et al., 2004; Van Egeren, 2003). Few studies have examined coparenting relationships during adolescence or young adulthood (Feinberg et al., 2007; Forehand & Jones, 2003). One intent of the current study was to expand on previous research by examining the impact of coparenting on adjustment in young adulthood. Coparenting quality was measured using questionnaires to assess perception of both supportive and conflict aspects of coparenting quality when growing up.

**Effects of coparenting.** Many studies examining coparenting quality have focused on how coparenting is associated with child adjustment and maladjustment (Belsky et al., 1995; Feinberg et al., 2007; Forehand & Jones, 2003; Ross & Fuertes, 2010; Schoppe, Mangelsdorf, & Frosch, 2001). These studies have primarily focused on the effects of conflict or undermining coparenting on internalizing and externalizing problems. However, some studies have begun to examine the effects of supportive coparenting as well. Generally, research has suggested that undermining coparenting is

associated with maladjustment whereas supportive coparenting is associated with less maladjustment.

***Emotional regulation.*** Several studies have discovered that parents with highly negative coparenting relationships are associated with child behavior problems. For example, Schoppe et al. (2001) found that coparenting interactions with high negative affect measured when the child was age three predicted more externalizing behaviors at age four. Conversely, they also found that supportive coparenting when the child was three predicted fewer externalizing behaviors at age four. Studies have also found an association between high conflict scores of coparenting quality and behavior problems in adolescence (Feinberg et al., 2007; Forehand & Jones, 2003). Fewer studies have examined the relationship between coparenting quality and internalizing problems (i.e. Turner & Kopiec, 2006). Ross and Fuertes (2010) found that low levels of coparenting conflict were associated with fewer depressive symptoms. Forehand and Jones (2003) found similar findings but only for girls and not boys. Overall, coparenting seems to play a role in both internalizing and externalizing adjustment in children of varying ages.

Research has also sought to identify the direction of the relationship between coparenting quality and child adjustment. Many studies have been longitudinal (i.e., Feinberg et al., 2007; Forehand & Jones, 2003; Schoppe-Sullivan et al., 2004;). These longitudinal studies are important in suggesting that the coparenting relationship may precede child adjustment. Specifically, these studies have suggested that coparenting dimensions, especially negative dimensions, are predictive of child adjustment problems.

***Coparenting and depression.*** Few studies have examined the relationship between coparenting and child depression in adolescence or young adulthood. Studies that have examined the effects of coparenting on adolescent adjustment have focused mostly on coparenting conflict or undermining coparenting (e.g. Feinberg, Kan, & Hetherington, 2007; Forehand & Jones, 2003). Feinberg et al. (2007) found that coparenting conflict predicts externalizing problems in adolescents but not depression. However, some have argued that depressive symptoms are present in adolescence with externalizing problems (Silk, Steinberg, & Morris, 2003). For example, one study found that mother reported coparenting conflict in single mother, African American families, revealed that high levels of conflict were associated with increased depressive symptoms in adolescents (Shook et al., 2010). Furthermore, low levels of coparenting conflict may be a protective factor for depressive symptoms in girls (Forehand & Jones, 2003). Therefore, in the current study, it was hypothesized that higher levels of child perceived coparenting conflict will be associated with higher levels of depressive symptoms. Therefore, it was also hypothesized that lower levels of coparenting conflict would be associated with lower levels of depressive symptoms.

The role of supportive coparenting on adolescent and young adult depressive symptoms has been studied even less. Shook, et al. (2010) studied supportive and conflict coparenting in single African-American mothers with the person they identified as coparenting with them. They found that supportive coparenting is associated with fewer depressive symptoms in adolescence. A goal of the current study was to contribute



to this gap in the research by examining the relationship between child reported supportive coparenting and depressive symptoms. Based on previous research, it was hypothesized that higher levels of child reported supportive coparenting would be associated with lower levels of depressive symptoms.

**Coparenting and the current study.** The focus of the current study was both supportive and undermining dimensions of coparenting as risk and protective factors of depression in young adults. In this study, coparenting quality was measured using a child report questionnaire which asked participants to identify their primary caregiver and the person who helped that person parent them. In this way, coparenting relationships in traditional, married, heterosexual relationships were assessed but nontraditional coparenting relationships were included as well in the study. One hope of the current study was to better understand how coparenting quality relates to depressive symptoms and how coparenting interacts with parent-child attachment and temperament.

### **Temperament and Attachment**

Researchers have debated whether or not a relationship exists between temperament and attachment for years. Studies have suggested conflicting evidence. Some studies have found a strong correlation between temperament and attachment while others claim only a mild to moderate correlation exists between these variables.

Some research has seemed to suggest that temperament and attachment are related. For example, Wachs and Desai (1993) found that mother reported temperament and attachment were correlated during toddlerhood. The study asked mothers to

complete the Toddler Temperament Scale and Attachment Q-sort about their toddler. Results indicated that temperament and attachment were significantly correlated. However, they also found that the family social environment was correlated with attachment even when partialing out temperament (Wachs & Desai, 1993). Therefore, these researchers have suggested that though temperament and attachment may correlate, other factors, like the environment may also affect attachment quality. Further, both attachment and temperament were reported by mothers. These results may be biased because mothers who have a secure attachment relationship with their child may be more likely to report that their toddler has an easier temperament. Similarly, mothers with insecure attachment relationships with their child may be more likely to report that their child has a difficult temperament.

Other studies have not supported that a relationship exists between temperament and attachment. For example, Niederhofer and Reiter (2003) found temperament and attachment to be only weakly related. The focus of the study was temperament and attachment with caregivers during infancy. They found that ambivalent attachment was significantly associated with difficult and slow to warm up temperament styles. However, they found no other significant correlations between other attachment and temperament styles (Niederhofer & Reiter, 2003). However, attachment relationships with young infants, which may arguably have been too early for a stable attachment relationship to have existed, were the focus of this study.

Some researchers have suggested that proneness to distress may mediate the relationship between temperament and attachment. For example, Mangelsdorf and Frosch (1999) found that infants with high levels of the temperament trait negative emotionality are more likely to become distressed during the strange situation. However, the researchers found no significant correlation between specific temperament traits and attachment quality in children. However, their research suggested that a “constellation” of temperaments may be predictive of attachment quality. Vaughn and Bost (1999) suggested that a modest relationship exists between attachment and temperament. Their research has suggested that a child’s temperament likely influences the way their caregivers react to them. For example, Crockenberg (1981) found that infants with irritable temperaments may be more likely to develop an anxious attachment with their mothers.

It seems obvious that if a relationship exists between temperament and attachment that temperament must predict attachment since temperament is defined as inborn. Researchers have explained that the modest relationship between temperament and attachment is likely because attachment may be affected both by child temperament but also how the caregiver responds to the child’s temperament. However, some researchers have also suggested that attachment relationships may also modify the expression of temperament (Vaughn & Bost, 1999).

Past research that has examined the relationship between temperament and attachment has mostly focused on infants and young children. This study is one of few to

examine this relationship in young adulthood. It was expected that a modest correlation would be present between temperament and attachment. Though temperament is supposed to be inborn, it was expected that the expression of temperament characteristics may have been modified by attachment relationships in the current study. Therefore, no direction between temperament and attachment was predicted in the current study.

### **Temperament and Coparenting**

The relationship between child temperament and coparenting quality has been examined in several studies in families with infants. Putnam, Sanson, and Rothbart (2002) found that child temperament strongly predicts general parenting quality. Therefore, coparenting may also be affected by child temperament. For example, conceptually, children with a difficult temperament may create a stressful parenting environment, therefore straining the coparenting relationship and causing low positive and high negative coparenting interactions. However, parents may instead react differently and work together more as team (Burney, 2011).

Studies that have examined the relationship between coparenting and temperament have been mixed. Some studies suggest that there is no direct relationship between temperament and coparenting. (McHale et al., 2004; Stright & Bales, 2003). However, other studies have supported a relationship between coparenting and temperament. For example, Burney (2011) reported that mothers who have infants with high levels of negative affect are more likely to report less positive coparenting and more negative coparenting. A study by Cook, Schoppe-Sullivan, Buckley, and Davis (2009)

supported that high levels of negative affect in infancy is related to undermining coparenting. However, some temperaments may increase supportive coparenting relationships. For example, child effortful control was positively associated with positive coparenting and negatively associated with negative coparenting (Burney, 2011). Additionally, a study by Van Egeren (2004) found that fathers with infants who have an easier temperament are more likely to report a better coparenting relationship. Research has further suggested that child temperament may affect coparenting relationships differently for mothers and fathers (Burney, 2011; Van Egeren, 2004). More research is necessary to better understand how temperament and coparenting are related and how temperament may affect mothers and fathers differently.

In addition, some studies have sought to better understand the direction of the relationship between coparenting and temperament. Because temperament is supposed to be inborn it seems that temperament may predict coparenting. However, Davis, Schoppe-Sullivan, Mangelsdorf, and Brown (2009) suggested that infant temperament and coparenting may have a bidirectional relationship. For example, their study found that infants with high levels of difficult temperament were related to decreased supportive coparenting. However, parents who initially reported high levels of supportive coparenting later reported a decrease in infant difficult temperament (Davis et al., 2009). In other words, supportive coparenting may modify how temperament is expressed. A study by Karreman, van Tuijl, van Aken, and Dekovic (2008) also suggested that coparenting may affect temperament, specifically effortful control, in children. Their

study found that greater levels of hostility and competitive coparenting predicted lower levels of effortful control in preschoolers. Based on these studies it seems that temperament and coparenting may have a bidirectional relationship.

To best of this author's knowledge, no studies have examined the relationship between child temperament and coparenting quality in young adulthood. A goal of this study was to fill this gap by assessing the relationship between temperament and coparenting quality. Based on previous research, it was expected that the relationship would be bidirectional in the current study. Previous research has shown that temperament remains fairly stable over time but may be influenced by environmental factors. Therefore, by early adulthood, it was expected that the coparenting environment would have probably influenced the child's temperament. Also, though there are mixed results on whether infant temperament affects coparenting, this study believed that the stress of a child's difficult temperament would have a greater impact on coparenting by late adolescence.

### **Attachment and Coparenting**

Several studies have examined the relationship between coparenting quality and attachment quality. Research has suggested that coparenting conflict is associated with less secure child-parent attachment relationships (Caldera & Lindsey, 2006; McHale, 2007). Some has research suggested that coparenting conflict may predict attachment quality (Frosch, Mangelsdorf, & McHale, 2000). For example, a study by Owen and Cox (1997) specified that interparental conflict predicts disorganized attachment in infancy.

Additionally, Frosch et al.'s study (2000) found that coparenting conflict when the child was six months old predicted attachment security at three years. Specifically, interparental hostility predicted less secure mother attachment. The results of this study also suggest that conflict coparenting may influence attachment differently for mothers and fathers. A gap in the literature exists regarding the role of coparenting conflict and attachment in young adulthood. In the current study, it was expected that conflict coparenting would negatively predict attachment security with at least one parent figure during young adulthood.

Most studies have examined the relationship between conflict coparenting and attachment but some have begun to research the effects of supportive or cooperative coparenting on attachment quality. Brown, Schoppe-Sullivan, Mangelsdorf, and Neff (2010) found that supportive coparenting is related to better father-child attachment security in infancy. They also suggested that supportive coparenting is predictive of attachment with both parents for boys but not for girls. Therefore, it may be important to understand how the gender of the child influences the relationship between coparenting and attachment. In the current study, the role of supportive coparenting on young adult attachment with each parent was examined separately. Additionally, it was believed that secure attachment to one or both parent figures may buffer against problems from conflict parenting. Conversely, it was also hypothesized that supportive coparenting would buffer against insecure attachment relationships with one or both parents.

## **Hypotheses**

A review of the literature has suggested that several temperament domains are likely related to depression. Overall, the research has suggested that depression is related to temperament traits including high negative affect, low positive affect, and low sociability (Nyman et al., 2011; Watson et al., 1994). Additionally, depression has been related to attentional problems and therefore, low effortful control may be related to depression as well (Kiff et al., 2011). In this study, the Adult Temperament Questionnaire was used to assess temperament. Therefore, in the present study, it was expected that participants who score high on the domain negative affect and low on the domains extraversion/surgency and effortful control would be more likely to report higher levels of depressive symptoms. One interest of this study was also to better understand the role of parent-child attachment quality as it relates to depression. After reviewing the literature, it was expected that participants with lower levels of attachment quality with either parent figure would report higher levels of depression.

Previous research has been inconclusive of the role coparenting plays on depression in young adulthood. However, it appears that conflict coparenting and unsupportive coparenting may relate to depression (Shook et al., 2010). Therefore, we hypothesized that participants who reported lower levels of supportive coparenting and higher levels of conflict coparenting would report more symptoms of depression.

Though an interest of this study was how temperament, attachment, and coparenting relate to depression separately, the main goal of this study was to use



hierarchical multiple regression to better understand how these variables together predict depression. Additionally, another interest of this study was how these variables were related to each other as well. It was expected that temperament, attachment, and coparenting would relate to one another.

## METHOD

### Participants

The focus of this study was on the development of depressive symptoms during young adulthood. Therefore, participants consisted of Fort Hays State University students between the ages of 18 and 22. One hundred seventy four students were recruited to participate in the study though only 163 fully completed all surveys. Participants were primarily recruited from psychology classes. A recruiting script was read to students in several classes. Some students received extra credit or course credit for participating in this study. No exclusions were made when recruiting participants except age.

Of the 174 participants recruited for this study, 20 were 18 years old, 65 were 19 years old, 45 were 20 years old, 24 were 21 years old, 19 were 22 years old, and one failed to report age. The sample was primarily Caucasian (86.2%). However, 5.7% were Hispanic, 4.6% were Black, 1.1% were Asian, and 1.7% reported that they were mixed. Additionally, this sample consisted of 35.1% males and 64.9% females. Participants also reported two people who they consider to be their primary parental figures. Eighty one percent of participants selected "Mother," 17.8% selected "Father," and .6% selected "Grandmother" as their Parent Figure 1. For participant's Parent Figure 2, 17.8% selected "Mother," 71.8% selected "Father," .6% selected "Step-Mother," 4.6% selected "Step-Father," 2.3% selected "Grandmother," and 1.1% selected "Grandfather." Participants also reported how their Parent Figures were related to each other. Of the 174

participants, 62.6% reported that their Parent Figures are currently married, 23.6% reported that their Parent Figures are currently divorced, 1.7% reported that their Parent Figures are unmarried, significant others, and 8% reported that their Parent Figures have a parent-child relationship.

## **Measures**

**Demographics.** A demographics questionnaire was used to gather information including gender, ethnicity, and age of the participant. This questionnaire also asked the participant to identify their relationship with two people who parented them most when growing up. This last question was also used to identify who the participants' "Parent Figures" are in later surveys.

**The Beck Depression Inventory-II (BDI-II).** Beck, Steer, and Brown (1996) revised the original Beck Depression Inventory creating the BDI-II. The BDI-II is a popular measure for assessing depressive symptoms clinically and empirically. It is a twenty-one question, self-reported questionnaire. High scores indicate increased symptoms of depression. Scores may range from 0 to 63.

Research shows the BDI-II has good reliability and validity (Beck et al., 1996). Coefficient alphas are reported at .92 for outpatients and .93 for a nonclinical sample. One week test-retest reliability is reported at .93. Concurrent validity of the BDI-II also appears moderate to high. For example, the BDI-II has a moderately high correlation with the Hamilton Psychiatric Rating Scale for Depression-Revised ( $r = .71$ ) (Beck et al., 1996).

**The Adult Temperament Questionnaire (ATQ).** Evans and Rothbart (2005) developed the ATQ using operational definitions of temperament constructs. The ATQ is adapted from the Physiological Reactions Questionnaire originally by Derryberry and Rothbart (1988). The ATQ measures four factor scales of temperament: Negative Affect, Extraversion/Surgency, Effortful Control, and Orienting Sensitivity which consist of 13 scales. However, in this study, questions were excluded that assess for Orienting Sensitivity since there is little research to suggest that it is related to depression. The 77 question, short form, self-report questionnaire was used for this study, which was reduced to 62 questions after removing the 15 questions that assess for Orienting Sensitivity. Participants responded to statements on a 7 point Likert Scale ranging from “Extremely untrue of me” to “Extremely true of me.” Participants could also choose an eighth option “Not applicable.” Factor scales are scored by first adding the Likert scores and then dividing by the total number of items that make up the factor scale. Unanswered items were replaced with the average score for that item from this sample. Surveys missing several items on the ATQ were not scored. The questionnaire has good reliability and validity with other temperament and personality measures (Evans & Rothbart, 2007).

**The Inventory of Parent and Peer Attachment Revised (IPPA-R).** Armsden and Greenberg (1989) created the IPPA-R for adolescence and young adults. The IPPA-R is a self-report inventory which assesses positive and negative affective and cognitive dimensions of parent and peer relationships, specifically as a source of security. More specifically, it assesses three broad dimensions which include degree of mutual trust,

quality of communication, and extent of anger and alienation. The IPPA-R consists of 75 questions. However, only the parent attachment scales were used in the current study, not the peer attachment scale since the focus of this study was to understand how early parent attachment relationships are related to depressive symptoms. Therefore, participants in this study only responded to 50 statements instead of the entire 75. Each parent scale is 25 questions which are answered on a five point Likert Scale ranging from “Almost Never or Never True” to “Almost Always or Always True.” The IPPA measures attachment relationships with mothers and fathers separately. For the purpose of this study, the survey was changed from mother and father to “Parent Figure 1” and “Parent Figure 2” to allow participants to respond to their relationship with the two people who parented them most even if this was not their mother or father.

The initial IPPA (Armsden & Greenberg, 1987) measured attachment with parents as a single construct. However, Armsden and Greenberg (1989) revised the initial IPPA to assess attachment security with each parent separately which reflects research that has suggested that attachment relationships may differ for each parent and attachment with mothers may be correlated with different aspects of child adjustment than attachment with fathers (Main & Weston, 1981; Ross & Fuertes, 2010).

**Scoring.** The three dimensions of attachment, trust, communication and alienation, assessed with the IPPA-R are scored collectively. Some items in the trust and communication dimensions are reverse scored and the entire alienation dimension is reverse scored. The sum of the dimension scores provides a total attachment score for

each parent. A participant's answered questions were averaged to replace any unanswered questions. However, surveys that were missing several answers were not scored. Higher numbers indicate more attachment security whereas lower numbers indicate less attachment security (Armsden & Greenberg, 1987).

***Reliability and Validity.*** Research shows that the IPPA-R has good reliability and validity. For example, Armsden and Greenberg (1987) found that three week test-retest reliability is .93 for the parent scales of the IPPA-R. Internal reliability was also found to be good with Chronbach's alphas of .87 for the mother attachment scale and .89 for the father attachment scale. The IPPA-R also has good concurrent validity, or is moderately to highly related to similar tests like the Social Self-Concept ( $r = .46$ ) and the Family Self-concept ( $r = .78$ ) (Armsden & Greenberg 1987).

**Coparenting in the Family of Origin Scale (CFO Scale).** The coparenting measure for this study was The Coparenting in the Family of Origin Scale used by Stright and Bales (2003). The CFO Scale originally measured coparenting relationships in traditional families. However, this scale was slightly modified so that participants can identify the two people who coparented them. The scale consists of 12 questions about the participant's experiences with their parents when growing up. Participants answered these questions on a five point likert scale. Specifically, the participants answered questions about supportive and undermining coparenting behaviors. Six questions assessed for supportive behaviors, like "My parents supported each other's parenting," and six questions measured undermining coparenting behaviors, like, "My parents gave

me conflicting messages when parenting me.” Scores for supportive coparenting behaviors and undermining coparenting behaviors were calculated separately by adding the scores for each subscale. A participant’s answered questions for each variable were averaged to replace any unanswered questions. However, surveys that were missing several answers were not scored. Stright and Bales (2003) measured internal consistency and found Cronbach’s *alpha* to range from .89 to .92.

### **Procedure**

Students who agreed to participate after hearing the recruiting script, signed a consent form. Those who consented to participate in the study completed five surveys: about their demographics, depressive symptoms, attachment with both parent figures, temperament traits, and their perception of their parent’s coparenting quality. Participants completed the demographic survey first; then, the other four surveys were counterbalanced to reduce error. When participants finished their surveys, they placed them in an envelope for confidentiality and received a debriefing form.

### **Data Analysis**

In this study, it was hypothesized that temperament, attachment, and coparenting are each predictive of depression in young adulthood and that they relate to one another. Therefore, a correlation matrix was run to investigate the relationship between temperament, attachment, and coparenting, and depression. Hierarchical multiple regression was also used to test the hypothesis that temperament, attachment, and coparenting are each predictive of depression. Initially, temperament was entered at stage

one because research suggests it is most predictive of depression and is also present beginning at birth. Attachment was entered at stage 2 because it develops early in life with parent figures and usually remains stable. Coparenting was entered at stage three because though it may first develop before birth, coparenting may not be stable over time. Also, past research on coparenting has shown mixed results about whether it is related to depression. Exploratory, hierarchical, multiple regressions were also run with the same variables in different orders to investigate the role temperament, attachment, and coparenting play in predicting depression. Hierarchical, multiple regressions were also run entering attachment with Parent Figure 1 and Parent Figure 2 at different stages to better understand the role attachment plays with one parent versus the other in predicting depression.

Upon reviewing the literature, it was expected that temperament with high levels of negative affect and low levels of extraversion/surgency and effortful control relate to higher levels of depression (Nyman et al., 2011; Sportel et al., 2011; Watson et al., 1994). Additionally, in this study, it was expected that lower scores on parent-child attachment, or less attachment security, would relate to higher levels of depression (Feres, 2010). Finally, lower levels of supportive coparenting and higher levels of conflict coparenting were expected to relate to higher levels of depression (Forehand & Jones, 2003; Shook et al., 2010).



## RESULTS

### Main Analyses

**Descriptive Statistics and Correlations.** Descriptive statistics were run for all variables (See Table 1). A correlation matrix was also run because in this study, it was predicted that many of these variables were significantly related to each other. For example, it was predicted that temperament, attachment, and coparenting were all related to depression. A correlation matrix revealed that all variables were significantly related to depression (See Table 1). Specifically, the temperament traits, extraversion and effortful control, attachment with both caregivers, and supportive coparenting were negatively related to depressive symptoms. Additionally, the temperament trait, negative affect, and competitive coparenting were positively correlated with depressive symptoms.

Table 1

#### *Correlation Matrix of Depression, Temperament, Attachment, and Coparenting*

##### *Variables*

|                         | Depression | E/S     | EC      | NA      | A1      | A2      | SC      | CC    |
|-------------------------|------------|---------|---------|---------|---------|---------|---------|-------|
| Extraversion/Surgency   | -.37***    |         |         |         |         |         |         |       |
| Effortful Control       | -.13***    | .27***  |         |         |         |         |         |       |
| Negative Affect         | .58***     | -.44*** | -.48*** |         |         |         |         |       |
| Attachment: Parent 1    | -.25**     | .19**   | .27***  | -.27*** |         |         |         |       |
| Attachment: Parent 2    | -.21**     | .24**   | .14*    | -.20**  | .29***  |         |         |       |
| Supportive Coparenting  | -.20**     | .18*    | .12     | -.09    | .34***  | .59***  |         |       |
| Competitive Coparenting | .24**      | -.15*   | -.16*   | .15*    | -.45*** | -.45*** | -.73*** |       |
| Mean                    | 10.44      | 80.12   | 70.26   | 97.53   | 104.79  | 95.53   | 22.87   | 11.73 |
| SD                      | 9.29       | 12.08   | 11.20   | 18.47   | 16.42   | 21.84   | 5.52    | 4.42  |

*Note.*  $N = 163$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Relationship Between Variables.** In this study it was also predicted that the variables temperament, attachment, and coparenting were related to one another. Therefore, a correlation matrix was also run to examine the relationship between these variables (See Table 1). The results showed that the temperament trait, extraversion, was significantly, positively correlated with attachment with both parent figures and supportive coparenting and negatively correlated with competitive coparenting. The temperament trait, effortful control was significantly positively correlated with attachment to both parent figures and negatively correlated with competitive coparenting. Additionally, the temperament trait, negative affect, was significantly negatively related to attachment with both parent figures and positively related to competitive coparenting. Also, effortful control and negative affect were not significantly related to supportive coparenting.

**Predicting Depression from Temperament, Attachment, and Coparenting.** A three stage, hierarchical, multiple regression was performed to evaluate how well temperament, attachment and coparenting would predict depressive symptoms. The temperament variables, extraversion/surgency, effortful control, and negative affect were entered at stage one. Attachment variables, Parent Figure 1 and Parent Figure 2, were entered at stage two. Finally, the coparenting variables, supportive and competitive coparenting were entered at stage three. The order these variables were entered was based on the prediction that temperament would be most predictive of depressive

symptoms, followed by attachment, and finally coparenting. Regression statistics for this model are in Table 2.

The overall regression model was statistically significant,  $R = .63$ ,  $R^2 = .39$ , adjusted  $R^2 = .36$ ,  $F(7, 155) = 14.24$ ,  $p < .001$ . Temperament, attachment, and coparenting together explain approximately 36% of the variance in depression symptoms. The hierarchical multiple regression was also used to assess which variables significantly contributed to the variance of depression. The hierarchical multiple regression revealed that temperament contributed significantly to the regression model with an  $R^2$  increment of  $.37$ ,  $F(3, 159) = 31.57$ ,  $p < .001$ . However, the addition of attachment variables to the model only explained an additional  $R^2$  increment of  $.01$ ,  $F(2, 157) = .90$ ,  $p > .05$ . The model also showed that coparenting did not significantly contribute to the model with an  $R^2$  increment of  $.01$ ,  $F(2, 155) = 1.40$ ,  $p > .05$ . The results of this hierarchical multiple regression model show that though attachment and coparenting variables are correlated with depression, they do not significantly account for the variance of depression when temperament is accounted for.

### **Supplemental Analyses**

**Predicting Depression from Temperament, Attachment, and Coparenting when Temperament Variables are not Entered First.** Two additional hierarchical regressions were run using the same variables. However, the order in which the variables were entered was changed in order to see if entering temperament later in the model changed the contribution of attachment and coparenting variables. See Table 3 and Table

4 for these regression statistics. Results indicate that though steps that include attachment or coparenting can become statistically significant when manipulating the order temperament is entered, temperament accounts for the majority of variance of depression.

**Predicting Depression from Attachment with each Parent Figure.** Two hierarchical multiple regression models were conducted to better understand the role that attachment with each parent figure plays in predicting depression. For the first hierarchical multiple regression, attachment with parent figure one was entered in the first stage and attachment with parent figure two was entered at stage two (See Table 5 for regression statistics). The overall model was statistically significant,  $R = .28$ ,  $R^2 = .08$ , adjusted  $R^2 = .07$ ,  $F(1, 166) = 14.1$ ,  $p < .001$ . Attachment with parent figure one was found to be a statistically significant contributor to the regression with an  $R^2$  increment of .08,  $F(1, 166) = 14.1$ ,  $p < .001$ . However, attachment with parent figure two did not significantly contribute to the variance in depression with an  $R^2$  increment of .02,  $F(1, 165) = 3.24$ ,  $p > .05$ .

In the second hierarchical multiple regression with these same two variables, attachment with parent figure two was entered at stage one while attachment with parent figure one was entered at stage two (See Table 6 for regression statistics). In this model, attachment with parent figure one was found to significantly contribute to the regression model with an  $R^2$  increment of .04,  $F(1, 166) = 6.99$ ,  $p < .01$ . Attachment with parent figure two was also found to significantly contribute to the variance in depression with an  $R^2$  increment of .06,  $F(1, 165) = 10.15$ ,  $p < .01$ .

Table 2

*Hierarchical Multiple Regression Predicting Depression: Step 1 Temperament, Step 2 Attachment, and Step 3 Coparenting*

| Variable                | B    | T       | R   | R <sup>2</sup> | Δ R <sup>2</sup> |
|-------------------------|------|---------|-----|----------------|------------------|
| Step 1                  |      |         | .61 | .37            | .37              |
| Extraversion/Surgency   | -.13 | -1.90   |     |                |                  |
| Effortful Control       | -.18 | -2.53*  |     |                |                  |
| Negative Affect         | .43  | 5.54*** |     |                |                  |
| Step 2                  |      |         | .62 | .38            | .01              |
| Extraversion/Surgency   | -.12 | -1.67   |     |                |                  |
| Effortful Control       | -.17 | -2.33   |     |                |                  |
| Negative Affect         | .41  | 5.30    |     |                |                  |
| Attachment: Parent 1    | -.06 | -.83    |     |                |                  |
| Attachment: Parent 2    | -.06 | -.83    |     |                |                  |
| Step 3                  |      |         | .63 | .39            | .01              |
| Extraversion/Surgency   | -.12 | -1.63   |     |                |                  |
| Effortful Control       | -.17 | -2.26   |     |                |                  |
| Negative Affect         | .42  | 5.39    |     |                |                  |
| Attachment: Parent 1    | -.01 | -.20    |     |                |                  |
| Attachment: Parent 2    | .00  | .04     |     |                |                  |
| Supportive Coparenting  | -.05 | -.50    |     |                |                  |
| Competitive Coparenting | .09  | .95     |     |                |                  |

Note. N = 163, \*p < .05, \*\*p < .01, \*\*\*p < .001

Table 3

*Hierarchical Multiple Regression Predicting Depression: Step 1 Attachment Step 2 Temperament, and Step 3 Coparenting*

| Variable                | $\beta$ | $T$     | $F$      | $R$ | $R^2$ | $\Delta R^2$ |
|-------------------------|---------|---------|----------|-----|-------|--------------|
| Step 1                  |         |         | 7.23**   | .29 | .08   | .08          |
| Attachment: Parent 1    | -.21    | -2.61*  |          |     |       |              |
| Attachment: Parent 2    | -.15    | -1.89   |          |     |       |              |
| Step 2                  |         |         | 25.12*** | .62 | .38   | .30          |
| Attachment: Parent 1    | -.06    | -.83    |          |     |       |              |
| Attachment: Parent 2    | -.06    | -.83    |          |     |       |              |
| Extraversion/Surgency   | -.12    | -1.67   |          |     |       |              |
| Effortful Control       | -.17    | -2.33*  |          |     |       |              |
| Negative Affect         | .41     | 5.30*** |          |     |       |              |
| Step 3                  |         |         | 1.40     | .63 | .39   | .01          |
| Attachment: Parent 1    | -.01    | -.20    |          |     |       |              |
| Attachment: Parent 2    | .00     | .04     |          |     |       |              |
| Extraversion/Surgency   | -.12    | -1.63   |          |     |       |              |
| Effortful Control       | -.12    | -2.26*  |          |     |       |              |
| Negative Affect         | .42     | 5.39*** |          |     |       |              |
| Supportive Coparenting  | -.05    | -.49    |          |     |       |              |
| Competitive Coparenting | .09     | .95     |          |     |       |              |

*Note.*  $N = 163$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Table 4

*Hierarchical Multiple Regression Predicting Depression: Step 1 Coparenting Step 2 Attachment, and Step 3 Temperament*

| Variable                | $\beta$ | $T$     | $F$      | $R$ | $R^2$ | $\Delta R^2$ |
|-------------------------|---------|---------|----------|-----|-------|--------------|
| Step 1                  |         |         | 4.96**   | .24 | .06   | .06          |
| Supportive Coparenting  | -.05    | -.41    |          |     |       |              |
| Competitive Coparenting | .21     | 1.85    |          |     |       |              |
| Step 2                  |         |         | 2.95     | .30 | .09   | .03          |
| Supportive Coparenting  | .02     | .20     |          |     |       |              |
| Competitive Coparenting | .13     | 1.12    |          |     |       |              |
| Attachment: Parent 1    | -.17    | -1.94   |          |     |       |              |
| Attachment: Parent 2    | -.12    | -1.24   |          |     |       |              |
| Step 3                  |         |         | 25.38*** | .63 | .39   | .30          |
| Supportive Coparenting  | -.05    | -.49    |          |     |       |              |
| Competitive Coparenting | .09     | .95     |          |     |       |              |
| Attachment: Parent 1    | -.01    | -.20    |          |     |       |              |
| Attachment: Parent 2    | .00     | .04     |          |     |       |              |
| Extraversion/Surgency   | -.12    | -1.63   |          |     |       |              |
| Effortful Control       | -.17    | -2.26*  |          |     |       |              |
| Negative Affect         | .42     | 5.39*** |          |     |       |              |

Note.  $N = 163$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Table 5

*Hierarchical Multiple Regression Predicting Depression with Attachment with Parent 1 on Step 1 and Attachment with Parent Figure 2 on Step 2.*

| Variable             | B    | <i>t</i> | <i>R</i> | <i>R</i> <sup>2</sup> | $\Delta R^2$ |
|----------------------|------|----------|----------|-----------------------|--------------|
| Step 1               |      |          | .28      | .08                   | .08          |
| Attachment: Parent 1 | -.28 | -3.76*** |          |                       |              |
| Step 2               |      |          | .31      | .10                   | .02          |
| Attachment: Parent 1 | -.24 | -3.19**  |          |                       |              |
| Attachment: Parent 2 | -.14 | -1.8     |          |                       |              |

*Note.* *N* = 163, \**p* < .05, \*\**p* < .01, \*\*\**p* < .001

Table 6

*Hierarchical Multiple Regression Predicting Depression with Attachment with Parent 2 on Step 1 and Attachment with Parent Figure 1 on Step 2.*

| Variable             | B    | <i>t</i> | <i>R</i> | <i>R</i> <sup>2</sup> | $\Delta R^2$ |
|----------------------|------|----------|----------|-----------------------|--------------|
| Step 1               |      |          | .20      | .04                   | .04          |
| Attachment: Parent 2 | -.20 | -2.64**  |          |                       |              |
| Step 2               |      |          | .31      | .10                   | .06          |
| Attachment: Parent 2 | -.14 | -1.80    |          |                       |              |
| Attachment: Parent 1 | -.24 | -3.19**  |          |                       |              |

*Note.* *N* = 163, \**p* < .05, \*\**p* < .01, \*\*\**p* < .001



## DISCUSSION

### **Temperament and Depression**

**Negative Affect and Depression.** Past studies have suggested that high levels of the temperament trait negative affect are correlated with and predictive of depressive symptoms (i.e. Lonigan et al., 2003; Oldehinkel et al., 2006; Watson, Clark, & Harkness, 1994). Though this study is one of the first studies to examine the relationship between negative affect as measured by Evans and Rothbart's (2007) Adult Temperament Questionnaire (ATQ), it was expected that high scores on negative affect would predict greater depressive symptoms. Results from this study suggest that negative affect, as measured by the ATQ is significantly predictive of depression in young adulthood.

**Extraversion/Surgency and Depression.** This study also hypothesized that lower levels of the temperament domain, extraversion/surgency would be predictive of greater depressive symptoms. Previous studies have found low levels of positive affect, which is one trait of extraversion surgency, to be associated with and predictive of depression (Betts, Gullone, & Allen, 2009; Watson, Clark, & Harkness, 1994). Additionally, past research has also found the temperament trait low sociability, which is also a trait under extraversion/surgency, to be associated with depression (Nyman et al., 2011). This is the first study the authors know of to examine the relationship between extraversion/surgency and depression. Results from this study suggest that extraversion/surgency is significantly correlated with depression. However, when extraversion/surgency was entered into a hierarchical multiple regression model with negative affect and effortful control, it was not found to be significantly predictive of

depression. Therefore, because extraversion/surgency is related to negative affect and effortful control, the results of this study may suggest that extraversion/surgency does not predict depression beyond the variance it shares with negative affect and effortful control. Therefore, though extraversion/surgency is related to depression, it is not significantly useful in predicting depression symptoms if negative affect and effortful control are being used.

**Effortful Control and Depression.** This was one of the first studies to investigate the relationship between effortful control as measured by Evan and Rothbart's ATQ (2007). Some studies have found a relationship between attentional control (which is one trait that makes up effortful control) and depression (Sportel, et al, 2011). Effortful control is also comprised of the temperament traits attentional control, inhibitory control, and activation control. In this study, it was found that effortful control is significantly correlated with and predictive of depressive symptoms.

This study is groundbreaking not only because it is one of the first studies to suggest effortful control is related to depression, but because it suggests that depression may likely be prevalent in other mental disorders. The traits that make up the temperament domain effortful control are frequently associated with conduct disorders, ADHD, and other externalizing disorders. However, some researchers have suggested that depression may be present in many externalizing disorders and the current study supports this idea (Sportel et al., 2011).

## **Attachment and Depression**

Results from many studies have suggested that attachment with parents is related to and predictive of depression. Though the current study found attachment with parent figures to be significantly mildly correlated with depression in young adulthood, attachment was not significantly predictive of depression when accounting for temperament or coparenting. This is one of the first studies to examine how attachment and temperament predict depression together and was also one of the first to suggest that attachment may not be significantly predictive of depression.

Though the current study did not find attachment to be predictive of depression when accounting for temperament, it was predictive when entered alone. When attachment with each parent figure was entered into a hierarchical multiple regression model with depression as the dependent variable, this study found that attachment with one parent figure may be more important than attachment with both parent figures when predicting depression. For example, the results showed that attachment with Parent Figure 2 did not significantly explain variance in depression after controlling for attachment for Parent Figure 1. However, attachment with Parent Figure 1 did significantly explain variance of depression after controlling for attachment with Parent Figure 2. Therefore, attachment with the parent figure identified as the primary parent seems to be most important when predicting depression. This may be because in the current study, 81% of participants identified their parent figure one as their mother. Previous studies have suggested that attachment relationships with mothers may be more

predictive of depression than attachment relationships with fathers. However, this may also mean that the attachment relationship with whoever is considered the primary parent is most important in predicting depression and that 81% of participants considered their mother to be their primary parent figure.

### **Coparenting and Depression**

Few studies have been conducted to examine the relationship between coparenting and depression and the results of these few studies have been mixed (Feinberg et al., 2007; Shook et al., 2010). However, in this study, it was hypothesized that high competitive coparenting and low supportive coparenting would be related to and predictive of depression. The results of this study suggest that a mild but significant correlation exists between coparenting quality and depression. This was the first study to examine the relationship between depression and temperament, attachment, and coparenting together. Though this study supports that a mild relationship exists between coparenting and depression, coparenting was not found to be significantly predictive of depression when accounting for temperament or attachment.

### **Depression and Temperament, Attachment, and Coparenting**

This was the first study to examine the relationship between depression and the variables temperament, attachment, and coparenting together. It was expected that temperament, attachment, and coparenting would each be predictive of depression when accounting for one another. However, the results of this study suggest that temperament is the primary variable in predicting depression. Though attachment and coparenting

were significantly predictive of depression when entered separately from temperament, too much variance existed between these variables and temperament when predicting depression. Therefore, this study suggests that though attachment and coparenting significantly predict depression independently, in young adulthood, temperament is the primary predictor of depression.

These results may have implications for prevention and intervention efforts. Because this study found temperament to be an important variable in predicting depression, it may be useful to detect temperament traits that are risk factors of depression, like high negative affect and low effortful control as early as possible. Though temperament is thought to be inborn, many studies have suggested that the expression of temperament can be changed. Attachment relationships with parents and coparenting quality may be two variables that can affect the expression of temperament. Therefore, once children have been identified as having temperament traits that are risk factors for depression, prevention efforts may need to focus on the healthy development of attachment and coparenting relationships.

### **Temperament and attachment**

Past research investigating the relationship between temperament and attachment have been mixed and have primarily focused on young children. This is one of the first studies to examine the relationship in young adulthood. This study suggests that at least some temperament traits are significantly mildly related to attachment relationships with parent figures. In this study, it was hypothesized that lower levels of

extraversion/surgency and effortful control would be related to lower attachment levels with parent figures. Additionally, it was also expected that higher levels of negative affect would be related to lower levels of attachment with parent figures. The results of this study support these hypotheses. Therefore, these results contribute to the existing body of literature by suggesting that in young adulthood, the temperament traits negative affect, extraversion/surgency, and effortful control are all significantly, mildly related to attachment security with both parent figures.

### **Temperament and coparenting**

To the best of this author's knowledge, this is the first study to examine the relationship between temperament and coparenting in young adulthood. Few studies have been conducted to examine this relationship in infants and early childhood, however. Generally, in this study, it was hypothesized that high effortful control, extraversion/surgency, and low negative affect would be related to low levels of competitive and high levels of supportive coparenting.

*Effortful control and coparenting.* Past research has suggested that effortful control in early childhood significantly predicts higher levels of supportive coparenting and lower levels of negative affect (Burney, 2011). It was expected that the current study would show similar results. However, the results of this study suggest that though higher levels of effortful control are significantly related to lower levels of competitive coparenting, effortful control is not significantly related to supportive coparenting in young adulthood.

Past research has also suggested that coparenting and temperament may have a bidirectional relationship. More specifically, child temperament may influence how parents interact with each other, but research has also suggested that coparenting quality may affect how temperament is expressed as well (Davis et al., 2009). One study specifically found that competitive coparenting predicted lower levels of effortful control in preschoolers. However, lower levels of effortful control may strain the coparenting relationship and cause more competitive coparenting interactions. The results of this study may have implications for intervention and prevention efforts. For example, intervention and prevention efforts for families with children low in effortful control may need to focus on parenting techniques to avoid harmful competitive and conflictive behaviors in the coparenting relationship from developing and to potentially increase effortful control in children.

*Extraversion/surgency and coparenting.* To the best of this author's knowledge, this is the first study to examine the relationship between extraversion/surgency and coparenting. Despite the lack of research about this relationship, it was hypothesized that higher levels of extraversion/surgency would be related to higher levels of supportive coparenting and lower levels of competitive coparenting. The results of this study suggest that a mild though significant relationship exists between extraversion/surgency and coparenting quality. It seems plausible that higher levels of supportive coparenting and lower levels of competitive coparenting may be associated with extraversion/surgency because parenting a sociable child with positive affect could be

easier, allowing for fewer arguments and greater support in the coparenting relationship. It is also possible that high supportive and low competitive coparenting relationships influence how extraversion/surgency is expressed. For example, pleasure and sociability are components of supportive coparenting which may act as a model for children. In this way, children who model their parent's supportive interactions may behave in a way that is higher in extraversion/surgency. Therefore, the results of this study may suggest that treatment intervention and prevention should focus on increasing supportive coparenting behaviors to model positive affect and sociability to children, which in turn may support healthy adjustment later in life.

***Negative affect and coparenting.*** Past studies have investigated the relationship between negative affect and coparenting when children are infants. These studies have suggested that children with negative affect are more difficult to parent which leads to decreased supportive coparenting and increased negative coparenting. It was expected that this study would find similar results. However, the results of this study suggest that negative affect is only mildly significantly related to competitive coparenting, not supportive coparenting. This relationship could be explained in two ways; children with negative affect growing up may lead to more arguments and displeasure in the coparenting relationship, or coparenting relationships that display and model arguments and displeasure may lead to the expression of greater negative affect in young adulthood. Therefore, the results of this study may suggest that parenting interventions to decrease competitive coparenting behaviors may help decrease the risk of negative affect in



children. Additionally, parents with children high in negative affect may be at risk for developing a competitive coparenting relationship. Therefore, these parents may benefit from therapy geared towards bettering coparenting interactions.

### **Attachment and coparenting**

Several studies have examined the relationship between attachment and coparenting during infancy and early childhood. However, this is the first study to the best of this author's knowledge to investigate this relationship in young adulthood. This study found that supportive coparenting was significantly, moderately related to increased levels of attachment security with both parent figures, especially Parent Figure 2. This study also suggests that competitive coparenting is significantly, moderately related to lower levels of attachment security with both parent figures. These results are consistent with the literature as well.

Past studies have examined how coparenting predicts attachment relationships because the coparenting relationship develops first. However, it is unknown whether coparenting remains stable throughout the child's development. Therefore, it is possible that a bidirectional relationship between attachment and coparenting exists. Hence, it is possible that a supportive coparenting relationship encourages the development of attachment relationships with both parent figures and that competitive coparenting discourages this attachment development. However, it is also possible that less secure attachment with one or more parent figures causes hostility in the coparenting relationship and therefore, less supportive and more competitive coparenting. The results

of this study may have implications for treatment. First, these results paired with past research may suggest that coparenting education and training may be useful prior to the birth of children in order to help both parent figures develop health attachment relationships with the child. Additionally, if difficulty is detected in the attachment relationship between the child and one or both parents, the coparenting relationship may be at risk. Therefore, therapy that focuses on both attachment and coparenting may be necessary at this time.

### **Limitations of Current Study**

This study had several limitations. First, participants in this study were students at a small, rural, Midwestern University. Therefore, this study failed to include participants who are less educated or those from urban areas. This study also lacked a diverse population. The majority of participants were white and approximately 65% of participants were female. Therefore, this research may not generalize to the population.

This study also primarily surveyed students in psychology classes which was a convenient sample rather than a random sample. This could have several implications for the study. First, there may be specific traits that draw people to psychology classes in general. Also, this study surveyed students who attended class. Research has suggested that depression is associated with academic dysfunction including truancy (Weissman et al., 1999). Therefore, in this study, people who were surveyed may have primarily been people who were functioning better academically and who were less depressed than the general population.

This study was also conducted at the end of the semester which tends to be a stressful time for students. Therefore, students may have been more likely to report symptoms of depression that were situational like eating and sleeping less. Additionally, depression was assessed using the BDI-II which assesses for depressive symptoms in the past two weeks. Therefore, it is possible there were participants who were effectively being treated for depression or whose depression was in remission that scored low on the BDI but who have a history of depression.

Finally, there were limitations with the methodology of the study. First, all measures were self-reported by participants. This may have led to biased responses. For example, people with depression tend to perceive events and situations worse than those who are not depressed. Therefore, those with depressive symptoms may have been more likely to recall negative coparenting memories and less support from their parents than those with fewer depressive symptoms. Additionally, in this study, temperament, attachment, coparenting, and depression were assessed at the same time, and it was assumed that temperament, attachment, and coparenting predicted depression. However, it is possible that depression impacts the expression of temperament, attachment quality, and causes stress on coparenting relationships.

### **Direction for Further Research**

One of the biggest limitations of this study was that directionality of variables was assumed. Specifically, in the current study, it was assumed that temperament, attachment, and coparenting predicted depression. Further research should include

longitudinal studies to better assess that temperament, attachment, and coparenting precede the onset of depression.

Additionally, this study was one of the first studies to assess the relationship between coparenting and attachment and coparenting and temperament for this age group. Therefore, replication of these results is necessary to confirm these relationships. This was also one of the first studies to assess coparenting from the perception of the child when growing up. Further studies could focus on how the child's perception of the coparenting relationship is related to parents' perspectives and more objective coparenting measures.

Finally, in this study, it was found that though attachment and coparenting are related to depression, they fail to account for any significant variance in depression when accounting for temperament. It was also found that temperament was significantly related to attachment in depression. Therefore, to better understand how these related variables predict depression, further research should use structural equation modeling to better understand how attachment and coparenting mediate or moderate the relationship between temperament and depression.

## **Conclusions**

In this study, it was found that attachment with parent figures, coparenting, and the temperament traits effortful control, extraversion/surgency, and negative affect are all related to depression which was consistent this study's hypotheses. This was also one of the first studies to investigate the relationship between these variables and depression. It

was hypothesized that temperament, attachment, and coparenting would each predict depression even when accounting for the other variables. However, hierarchical, multiple regression suggested that temperament is most important in predicting depression and that attachment and coparenting do not significantly account for variance in depression when controlling for temperament. Additionally, this study suggests that temperament is significantly related to attachment relationships with parent figures in young adulthood and coparenting quality. This study was also one of the first to assess the relationship between coparenting and attachment and coparenting and temperament for this age group. Results from this study suggest that coparenting is significantly related to attachment and coparenting in young adulthood. Overall, this study has contributed to research in understanding the relationship between the variables temperament, attachment, coparenting, and depression in young adulthood.

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APPENDIX A  
Demographic Questionnaire



1) Please indicate your age:

- 18
- 19
- 20
- 21
- 22

2) Please specify your ethnicity:

- White
- Hispanic or Latino
- Black or African American
- Native American or American Indian
- Asian / Pacific Islander
- Other: \_\_\_\_\_

3) Please indicate your sex:

- Male
- Female

4) Though some people are parented by two married, heterosexual parents, many are not. However, research suggests that most parent figures (even single parents) make parenting decisions with someone. Below you will be asked to identify 2 people you considered to have primarily parented you growing up. **\*These 2 people will be referred to as you “PARENT FIGURES” in later surveys.\***

- a. Please indicate who **ONE** of your primary parents was growing up.  
**\*This person will be referred to as “PARENT FIGURE 1” in later surveys.\***

Mother  
 Father  
 Step-mother  
 Step-father  
 Grandmother  
 Grandfather  
 Other: \_\_\_\_\_

- b. The second person you consider to be your primary parent or to have parented with your primary parent is your:  
**\*This person will be referred to as “PARENT FIGURE 2” in later surveys.\***

Mother  
 Father  
 Step-mother  
 Step-father  
 Grandmother  
 Grandfather  
 Other: \_\_\_\_\_

- i. Parent Figure 1 and Parent Figure 2 you identified are related because they are:

Spouses  
 Ex-spouses  
 Unmarried significant others  
 Parent and child  
 Siblings  
 Friends  
 Neighbors  
 Other: \_\_\_\_\_

APPENDIX B

Inventory of Parent and Peer Attachment (IPPA)

This questionnaire asks about your relationships with important people in your life; the persons you identified as Parent Figure 1 and Parent Figure 2 earlier. Please read the directions to each part carefully.

Part I

Some of the following statements ask about your feelings about **Parent Figure 1**.

Please read each statement and circle the ONE number that tells how true the statement is for you now.

| Almost Never<br>Or Never True<br>1 | Not Very<br>Often True<br>2 | Sometimes<br>True<br>3 | Often<br>True<br>4 | Almost Always<br>or Always True<br>5 |
|------------------------------------|-----------------------------|------------------------|--------------------|--------------------------------------|
|------------------------------------|-----------------------------|------------------------|--------------------|--------------------------------------|

1. My Parent Figure 1 respects my feeling.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

2. I feel my Parent Figure 1 does a good job as my parent.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

3. I wish I had a different parent than my Parent Figure 1.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

4. My Parent Figure 1 accepts me as I am.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

5. I like to get my Parent Figure 1's point of view on things I'm concerned about.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

6. I feel it's no use letting my feelings show around my Parent Figure 1.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

7. My Parent Figure 1 can tell when I'm upset about something.

1                      2                      3                      4                      5

8. Talking over my problems with my Parent Figure 1 makes me feel ashamed or foolish.

1                      2                      3                      4                      5

9. My Parent Figure 1 expects too much from me.

1                      2                      3                      4                      5

10. I get upset easily around my Parent Figure 1.

1                      2                      3                      4                      5

11. I get upset a lot more than my Parent Figure 1 knows about.

1                      2                      3                      4                      5

12. When we discuss things, my Parent Figure 1 cares about my point of view.

1                      2                      3                      4                      5

13. My Parent Figure 1 trusts my judgment.

1                      2                      3                      4                      5

14. My Parent Figure 1 has him/her own problems, so I don't bother him/her with mine.

1                      2                      3                      4                      5

15. My Parent Figure 1 helps me to understand myself better.

1                      2                      3                      4                      5

16. I tell my Parent Figure 1 about my problems and troubles.

1                      2                      3                      4                      5

17. I feel angry with my Parent Figure 1.

1                      2                      3                      4                      5

18. I don't get much attention from my Parent Figure 1.

1                      2                      3                      4                      5

19. My Parent Figure 1 helps me to talk about my difficulties.

1                      2                      3                      4                      5

20. My Parent Figure 1 understands me.

1                      2                      3                      4                      5

21. When I am angry about something, my Parent Figure 1 tries to be understanding.

1                      2                      3                      4                      5

22. I trust my Parent Figure 1.

1                      2                      3                      4                      5

23. My Parent Figure 1 doesn't understand what I'm going through these days.

1                      2                      3                      4                      5

24. I can count on my Parent Figure 1 when I need to get something off my chest.

1                      2                      3                      4                      5

25. If my Parent Figure 1 knows something is bothering me, he/she asks me about it.

1                      2                      3                      4                      5

**Part II**

This part asks about your feelings about the person you identified as **Parent Figure 2**.

| Almost Never<br>Or Never True<br>1   | Not Very<br>Often True<br>2 | Sometimes<br>True<br>3 | Often<br>True<br>4 | Almost Always<br>or Always True<br>5 |
|--|-----------------------------|------------------------|--------------------|--------------------------------------|
| 1.   |                             |                        |                    |                                      |
| My Parent Figure 2 respects my feeling.  |                             |                        |                    |                                      |
| 1  | 2                           | 3                      | 4                  | 5                                    |
| 2.   |                             |                        |                    |                                      |
| I feel my Parent Figure 2 does a good job as my parent.                            |                             |                        |                    |                                      |
| 1  | 2                           | 3                      | 4                  | 5                                    |
| 3.   |                             |                        |                    |                                      |
| I wish I had a different parent than my Parent Figure 2.                           |                             |                        |                    |                                      |
| 1  | 2                           | 3                      | 4                  | 5                                    |
| 4.   |                             |                        |                    |                                      |
| My Parent Figure 2 accepts me as I am.   |                             |                        |                    |                                      |
| 1  | 2                           | 3                      | 4                  | 5                                    |
| 5.   |                             |                        |                    |                                      |
| I like to get my Parent Figure 2's point of view on things I'm concerned about.    |                             |                        |                    |                                      |
| 1  | 2                           | 3                      | 4                  | 5                                    |
| 6.   |                             |                        |                    |                                      |
| I feel it's no use letting my feelings show around my Parent Figure 2.             |                             |                        |                    |                                      |
| 1  | 2                           | 3                      | 4                  | 5                                    |
| 7.   |                             |                        |                    |                                      |
| My Parent Figure 2 can tell when I'm upset about something.                        |                             |                        |                    |                                      |
| 1  | 2                           | 3                      | 4                  | 5                                    |
| 8.   |                             |                        |                    |                                      |
| Talking over my problems with my Parent Figure 2 makes me feel ashamed or foolish. |                             |                        |                    |                                      |
| 1  | 2                           | 3                      | 4                  | 5                                    |

9. My Parent Figure 2 expects too much from me.

1                      2                      3                      4                      5

10. I get upset easily around my Parent Figure 2.

1                      2                      3                      4                      5

11. I get upset a lot more than my Parent Figure 2 knows about.

1                      2                      3                      4                      5

12. When we discuss things, my Parent Figure 2 cares about my point of view.

1                      2                      3                      4                      5

13. My Parent Figure 2 trusts my judgment.

1                      2                      3                      4                      5

14. My Parent Figure 2 has him/her own problems, so I don't bother him/her with mine.

1                      2                      3                      4                      5

15. My Parent Figure 2 helps me to understand myself better.

1                      2                      3                      4                      5

16. I tell my Parent Figure 2 about my problems and troubles.

1                      2                      3                      4                      5

17. I feel angry with my Parent Figure 2.

1                      2                      3                      4                      5

18. I don't get much attention from my Parent Figure 2.

1                      2                      3                      4                      5



19. My Parent Figure 2 helps me to talk about my difficulties.

1                      2                      3                      4                      5

20. My Parent Figure 2 understands me.

1                      2                      3                      4                      5

21. When I am angry about something, my Parent Figure 2 tries to be understanding.

1                      2                      3                      4                      5

22. I trust my Parent Figure 2.

1                      2                      3                      4                      5

23. My Parent Figure 2 doesn't understand what I'm going through these days.

1                      2                      3                      4                      5

24. I can count on my Parent Figure 2 when I need to get something off my chest.

1                      2                      3                      4                      5

25. If my Parent Figure 2 knows something is bothering me, he/she asks me about it.

1                      2                      3                      4                      5

## APPENDIX C

### The Coparenting in the Family of Origin Scale (CFO Scale)

**The following statements ask you to reflect on the family you grew up in. You do not need to remember specific incidents, just overall patterns. Please choose the number that most closely corresponds to the general practices between your parent figures you identified earlier.**

| Never | Infrequently | Sometimes | Frequently | Always |
|-------|--------------|-----------|------------|--------|
|-------|--------------|-----------|------------|--------|

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

1. My parent figures supported each other's parenting.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

2. My parent figures gave me conflicting messages when parenting me.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

3. My parent figures used parenting techniques that they knew the other did not want them to use.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

4. My parent figures backed up one another when disciplining me.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

5. My parent figures competed with each other for my attention.

|   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|

6. My parent figures listened to one another when one of them had something to say about me.

1                      2                      3                      4                      5

7. My parent figures criticized each other's parenting.

1                      2                      3                      4                      5

8. My parent figures worked well together raising me.

1                      2                      3                      4                      5

9. My parent figures ignored each other's requests for help with parenting me.

1                      2                      3                      4                      5

10. My parent figures argued about parenting.

1                      2                      3                      4                      5

11. My parent figures used similar parenting techniques.

1                      2                      3                      4                      5

12. My parent figures would calmly discuss parenting disagreements.

1                      2                      3                      4                      5

APPENDIX D

Adult Temperament Questionnaire (ATQ)

## ADULT TEMPERAMENT QUESTIONNAIRE (VERSION 1.3)

### Directions

On the following pages you will find a series of statements that individuals can use to describe themselves. There are no correct or incorrect responses. All people are unique and different, and it is these differences which we are trying to learn about. Please read each statement carefully and give your best estimate of how well it describes you. Circle the appropriate number below to indicate how well a given statement describes you.

| <u>circle #:</u> | <u>if the statement is:</u>   |
|------------------|-------------------------------|
| 1                | extremely untrue of you       |
| 2                | quite untrue of you           |
| 3                | slightly untrue of you        |
| 4                | neither true nor false of you |
| 5                | slightly true of you          |
| 6                | quite true of you             |
| 7                | extremely true of you         |

If one of the statements does not apply to you (for example, if it involves driving a car and you don't drive), then circle "X" (not applicable). Check to make sure that you have answered every item.

1. I become easily frightened.

1          2          3          4          5          6          7          X

2. I am often late for appointments.

1          2          3          4          5          6          7          X

3. Sometimes minor events cause me to feel intense happiness.

1          2          3          4          5          6          7          X

4. I find loud noises to be very irritating.
- 1          2          3          4          5          6          7          X
5. It's often hard for me to alternate between two different tasks.
- 1          2          3          4          5          6          7          X
6. I rarely become annoyed when I have to wait in a slow moving line.
- 1          2          3          4          5          6          7          X
7. I would not enjoy the sensation of listening to loud music with a laser light show.
- 1          2          3          4          5          6          7          X
8. I often make plans that I do not follow through with.
- 1          2          3          4          5          6          7          X
9. I rarely feel sad after saying goodbye to friends or relatives.
- 1          2          3          4          5          6          7          X
10. Even when I feel energized, I can usually sit still without much trouble if it's necessary.
- 1          2          3          4          5          6          7          X
11. Looking down at the ground from an extremely high place would make me feel uneasy.
- 1          2          3          4          5          6          7          X
12. I would not enjoy a job that involves socializing with the public.
- 1          2          3          4          5          6          7          X
13. I can keep performing a task even when I would rather not do it.
- 1          2          3          4          5          6          7          X
14. I sometimes seem to be unable to feel pleasure from events and activities that I should enjoy.
- 1          2          3          4          5          6          7          X

15. I find it very annoying when a store does not stock an item that I wish to buy.  
 1            2            3            4            5            6            7            X
16. I usually like to talk a lot.  
 1            2            3            4            5            6            7            X
17. I seldom become sad when I watch a sad movie.  
 1            2            3            4            5            6            7            X
18. When I am enclosed in small places such as an elevator, I feel uneasy.  
 1            2            3            4            5            6            7            X
19. When listening to music, I usually like turn up the volume more than other people.  
 1            2            3            4            5            6            7            X
20. Sometimes minor events cause me to feel intense sadness.  
 1            2            3            4            5            6            7            X
21. It is easy for me to hold back my laughter in a situation when laughter wouldn't be appropriate.
22. I can make myself work on a difficult task even when I don't feel like trying.  
 1            2            3            4            5            6            7            X
23. I rarely ever have days where I don't at least experience brief moments of intense happiness.  
 1            2            3            4            5            6            7            X
24. When I am trying to focus my attention, I am easily distracted.  
 1            2            3            4            5            6            7            X
25. I would probably enjoy playing a challenging and fast paced video-game that makes lots of noise and has lots of flashing, bright lights.  
 1            2            3            4            5            6            7            X
26. Whenever I have to sit and wait for something (e.g., a waiting room), I become agitated.  
 1            2            3            4            5            6            7            X



27. I'm often bothered by light that is too bright.  
1          2          3          4          5          6          7          X
28. I seldom become sad when I hear of an unhappy event.  
1          2          3          4          5          6          7          X
29. When interrupted or distracted, I usually can easily shift my attention back to whatever I was doing before.  
1          2          3          4          5          6          7          X
30. I find certain scratchy sounds very irritating.  
1          2          3          4          5          6          7          X
31. I like conversations that include several people.  
1          2          3          4          5          6          7          X
32. I am usually a patient person.  
1          2          3          4          5          6          7          X
33. It is very hard for me to focus my attention when I am distressed.  
1          2          3          4          5          6          7          X
34. Very bright colors sometimes bother me.  
1          2          3          4          5          6          7          X
35. I can easily resist talking out of turn, even when I'm excited and want to express an idea.  
1          2          3          4          5          6          7          X
36. I would probably not enjoy a fast, wild carnival ride.  
1          2          3          4          5          6          7          X
37. I sometimes feel sad for longer than an hour.  
1          2          3          4          5          6          7          X

38. I rarely enjoy socializing with large groups of people.
- 1            2            3            4            5            6            7            X
39. If I think of something that needs to be done, I usually get right to work on it.
- 1            2            3            4            5            6            7            X
40. It doesn't take very much to make me feel frustrated or irritated.
- 1            2            3            4            5            6            7            X
41. It doesn't take much to evoke a happy response in me.
- 1            2            3            4            5            6            7            X
42. When I am happy and excited about an upcoming event, I have a hard time focusing my attention on tasks that require concentration.
- 1            2            3            4            5            6            7            X
43. Sometimes, I feel a sense of panic or terror for no apparent reason.
- 1            2            3            4            5            6            7            X
44. I often have trouble resisting my cravings for food drink, etc.
- 1            2            3            4            5            6            7            X
45. Colorful flashing lights bother me.
- 1            2            3            4            5            6            7            X
46. I usually finish doing things before they are actually due (for example, paying bills, finishing homework, etc.).
- 1            2            3            4            5            6            7            X
47. I often feel sad.
- 1            2            3            4            5            6            7            X

48. I usually remain calm without getting frustrated when things are not going smoothly for me.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
49. Loud music is unpleasant to me.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
50. When I'm excited about something, it's usually hard for me to resist jumping right into it before I've considered the possible consequences.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
51. Loud noises sometimes scare me.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
52. When I see an attractive item in a store, it's usually very hard for me to resist buying it.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
53. I would enjoy watching a laser show with lots of bright, colorful flashing lights.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
54. When I hear of an unhappy event, I immediately feel sad.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
55. I usually like to spend my free time with people.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
56. It does not frighten me if I think that I am alone and suddenly discover someone close by.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
57. It takes a lot to make me feel truly happy.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|

58. When I am afraid of how a situation might turn out, I usually avoid dealing with it.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
59. I especially enjoy conversations where I am able to say things without thinking first.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
60. When I try something new, I am rarely concerned about the possibility of failing.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
61. It is easy for me to inhibit fun behavior that would be inappropriate.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|
62. I would not enjoy the feeling that comes from yelling as loud as I can.
- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | X |
|---|---|---|---|---|---|---|---|