

PARENTAL ATTACHMENT AND COLLEGE ADJUSTMENT IN EMERGING ADULTS:  
THE ROLES OF PERCEIVED STRESS AND COPING

by

Lee Anne Hausler

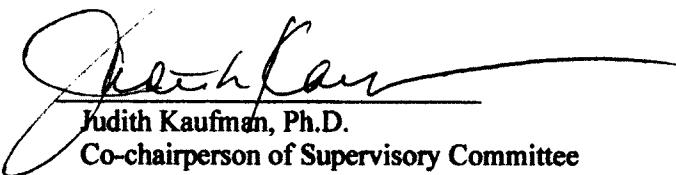
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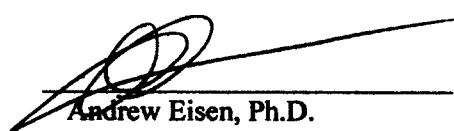
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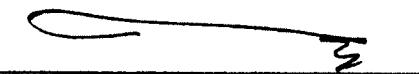
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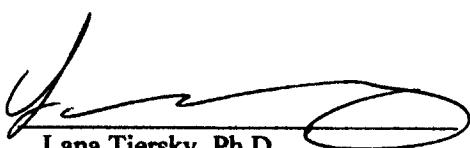
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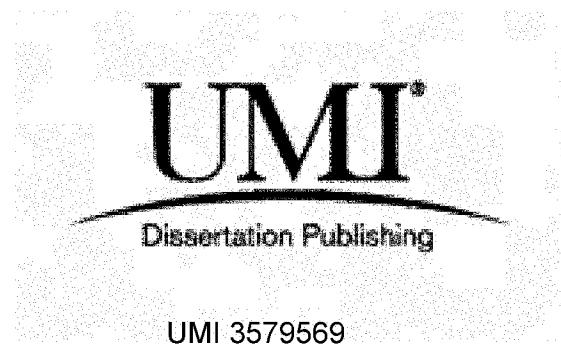
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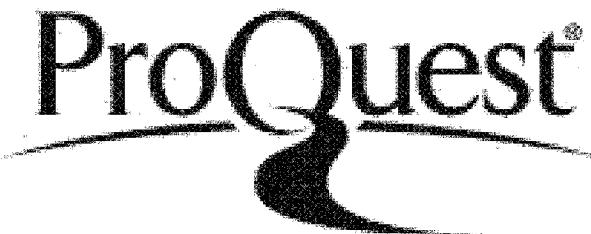
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**Abstract**

**Parental Attachment and College Adjustment in Emerging Adults:  
The Roles of Perceived Stress and Coping**

by Lee Anne Hausler

Chairpersons of the Supervisory Committee:

Andrew Eisen, Ph.D., and Judith Kaufman, Ph.D.

The goals of this study were to evaluate parental attachment security, measured by the Parental Attachment Questionnaire (PAQ), as a predictor of college adjustment [as measured by the Student Adaptation to College Questionnaire (SACQ)], and to test 14 coping styles included in the Brief COPE questionnaire as mediators of this relationship. Additionally, perceived stress [assessed using the Perceived Stress Scale (PSS)] was tested as a predictor of college adjustment, as well as a moderator of the relationship between parental attachment and coping. The results of the study partially supported the proposed hypotheses. Attachment security was predictive of college adjustment, both the full-scale adjustment score, as well as the personal-emotional, academic, and attachment to the university subscales of the SACQ. Attachment was only marginally predictive of social adjustment. The 3 dimensions of the PAQ were also investigated as predictors of college adjustment. Of these, the Affective Quality of Relationships and Parents as Source of Support dimensions emerged as significant predictors of adjustment. Among the evaluated coping styles, only denial mediated the relationship between parental attachment and college adjustment. Perceived stress moderated the association between attachment security and denial coping in a marginally significant fashion, such that the relationship was stronger when students reported greater levels of stress. With lower attachment security, students were more likely to use denial to cope, which in turn resulted in poorer adjustment. These findings are

**discussed in the context of attachment theory, with particular emphasis on the relevance of denial to attachment behaviors and adjustment outcomes. Implications for prevention and intervention programs on college campuses are discussed, based upon the findings. Limitations of the study and possible directions for future research are addressed.**

**TABLE OF CONTENTS**

<b>Acknowledgements</b>	<b>ii</b>
<b>Extended Literature Review</b>	<b>1</b>
<b>References</b>	<b>26</b>
<b>Empirical Article</b>	<b>36</b>

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### **Extended Literature Review**

The following sections will review the extant literature on emerging adulthood as a critical transitional period in development. Specifically, the relevance of attachment bonds and the role of stress and coping during this formative phase will be addressed, with particular emphasis on emerging adults who are entering college. These sections will present an overview of theories of attachment and coping, as well as empirical evidence on the impact of stress on adjustment. Theory and findings are reviewed with the aim of informing and developing a model of attachment, coping, and adjustment in emerging adulthood.

#### **Emerging Adulthood and College**

Emerging adulthood spans the period from late adolescence (around age 18) to young adulthood (mid- to late-20s), but it is phenomenologically distinct from both. Adolescents are by and large demographically homogeneous (e.g., living with parents, financially dependent, attending school full-time), and subjectively do not view themselves as adults. Young adulthood is similarly characterized by its demographic homogeneity (e.g., more likely to be married, financially independent). Young adults also tend to report the subjective experience of having achieved adulthood status. By comparison, emerging adulthood is marked by demographic diversity and heterogeneity in roles assumed, and by a subjective sense of being neither teenager nor fully adult. If adolescents and young adults are normatively (relatively) stable and uniform in their roles and trajectories (e.g., for adolescents, attending school and living with parents; for young adults, financial independence and career stability), emerging adulthood is remarkable for the fluidity and flux of the period (Arnett, 2000).

It is normative for emerging adults to engage in significant identity exploration and to try on different possible roles—in part, this accounts for why this period is so free of clear norms

and lacks stability (Arnett, 2000). This exploration allows individuals to discover who they are in terms of relationship and career goals and ideology. While the transitional period enables emerging adults to move closer to traditional markers of adult status (e.g., graduating college, stable career, marriage), it appears that they do not necessarily equate these achievements with attaining adulthood (Arnett, 1998; Nelson et al., 2007). Arnett (1998) argues that emerging adults define attainment of adulthood with an alternative set of criteria: responsibility for one's self, independent decision-making, and financial independence. Nelson et al. (2007) found that emerging adults also emphasize "relational maturity"—a sense of personal responsibility for one's actions and a move from self- to other-focused decision-making—as an important criterion for achieving adult status.

### **Stress in emerging adulthood.**

Emerging adulthood is typically a largely unstructured period, but this does not mean that it is stress-free. A large-scale study of young Australian women ( $n=8,749$ ) examined the sources of stress in emerging adulthood (Bell & Lee, 2008). Stress was studied in four major life domains (i.e., residential independence from family of origin, employment status, relationship status, and motherhood status) at two time points, using the Perceived Stress Questionnaire for Young Women (PSQYW; Bell & Lee, 2002; 2003). Transitions that involved non-normative "step backward" change (e.g., moving back in with parents after living alone), a failure to make an expected change (e.g., failing to get married "on time"), or a non-normative early attainment of adult status were particularly stressful for participants. Notably, participants who were enrolled in higher education programs reported the highest levels of stress in this sample. The most significant increase in stress was observed in women who enrolled in school in the interim between Time 1 and Time 2.

The experience of such stress can have profound effects on psychological functioning in emerging adults. Asberg and colleagues administered the Perceived Stress Scale (PSS; Cohen et al., 1983; Cohen & Williamson, 1988) and the Life Experiences Survey (LES; Sarason, Johnson, & Siegel, 1978) a sample of 239 emerging adults to assess perceived stress and life stress in the past year, respectively. The Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996), the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988), and the Satisfaction With Life Survey (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) were administered as measures of adjustment. For males, a correlation of .77 was found between stress and these adjustment variables; for females a correlation of .74. Higher levels of stress were linked to higher depression and anxiety scores, and lower life satisfaction.

#### **Sources of stress in college students.**

Of the various stressors in Bell and Lee's study (2008), the demands of matriculating college or graduate school appeared to be particularly challenging. Notably, the adjustment to becoming a student was one of the most stressful transitions observed in their sample of emerging adults. Though the transition to higher education may be fraught with significant stress, many individuals feel compelled to pursue a degree, particularly in the current job market. A growing number of jobs now go to college graduates, and having a bachelor's degree often translates to higher earnings and a reduced risk of unemployment (Arnett, 2007; BLS, 2010). With increasing pressure to attain a degree, college enrollment continues to rise (NCES, 2011), and more emerging adults than ever are embarking on the potentially stressful transition to college.

Clearly, adjusting to college life can be challenging. Researchers have attempted to elucidate exactly which factors contribute to the student experience of stress. For example, in a study of 100 undergraduate students, participants were asked to select the stressors they had experienced during the current school year from a list of options compiled by the authors (Ross, Niebling, & Heckert, 1999). Commonly reported stressors included change in sleeping habits (89%), change in eating habits (74%), new responsibilities (73%), increased class workload (73%), financial difficulties (71%), and change in social activities (71%). The majority of stressors endorsed (38%) were intrapersonal issues (e.g., change in sleeping habits, new responsibilities). Environmental stressors (e.g., computer problems, messy living conditions) comprised 28% of the responses, followed by interpersonal (e.g., change in social activities, roommate conflict) and academic (e.g., lower grade than anticipated, change in major) stressors. Interestingly, academic stressors were the lowest ranking, though it might be speculated that academic stress impacted most of the other categories assessed (e.g., less sleep due to studying, computer problems affecting ability to do schoolwork). It should be noted that students were recruited for this study from a co-ed service fraternity, and therefore, the generalizability of these findings may be limited.

A more recent study focused on sources of stress for students living in residence halls (Dusselier, Dunn, Wang, Shelley, & Whalen, 2005). This population might experience additional stress resulting from separation from home, family and friends, and adjustment to dorm life. Students ( $n=462$ ) were administered a survey that included various personal and health factors that might impact their stress levels (e.g., illness, relationships, financial problems). Reported causes of stress included conflict with faculty members, taking additional credit hours, conflict/dissatisfaction with roommates, difficulty studying in the residence hall (e.g., due to

noise), lack of sleep, chronic health problems, depression/anxiety, alcohol use, and being victims of assault. Students also noted that relationship variables, such as concern for family and friends, were a source of stress. The results of the study highlight the diverse range of potential stressors that students might encounter in college, running the gamut from sleep hygiene issues to victimization.

For international students, the American college environment may pose a number of additional challenges. Language barriers and communication issues are certainly a possible source of stress, with repercussions both academically and socially. Additionally, international students must adjust to the often radically different cultural and learning atmospheres of American institutions. Beyond academic and social adjustment, international students must cope with homesickness and separation from their former social support systems (Olivas & Li, 2006; Misra & Castillo, 2004).

Part-time students can face significant demands from multiple domains: school, work (often full-time), and family. Their responsibilities may vie for time and attention, creating some degree of conflict for these students. Using inventories of stress and inter-role conflict (see Hammer, Grigsby, & Woods, 1998; Kirby, Biever, Martinez, & Gomez, 2004), Giancola et al. (2009) found that conflicting school/work and school/family responsibilities were identified as major stressors for part-time students. While this particular study used a sample of students ranging widely in age (20-56 years old), the results still have implications for the potential role strain that younger working students might experience. These students are typically balancing other demands with their academic load out of financial or familial necessity. If stress becomes unmanageable, dropping out of school may be the only apparent option.

**The effects of stress on student adjustment.**

Given the wide variety of stressors faced in college, it is unsurprising that researchers have devoted considerable attention to the potentially deleterious impact of stress on students' adjustment. College adjustment is considered a multi-faceted construct, encompassing not only academic success and persistence, but also participation in and enjoyment of social activities and interpersonal relationships, psychological and emotional well-being, and connection and commitment to the environment of their particular institution (Baker & Siryk, 1984; 1989). As such, researchers have attempted to identify the effects of college stress on the various areas of adjustment.

For example, Daugherty and Lane (1999) examined predictors of college attrition longitudinally in a sample of 382 male freshmen. In addition to collecting data on academic ability (GPA from high school and SAT scores), legacy status of students, and experience of social alienation during college, a measure of positive and negative stress was administered. Taken together, these predictors were able to classify dropout students versus graduating students with 70% accuracy. The results suggested that students who experienced greater negative stress in their college experiences and less eustress (e.g., viewing college as a positive challenge) were significantly more prone to eventual attrition. Furthermore, those students who dropped out reported higher levels of social isolation, arguably a source of stress in the college environment, than did those who eventually went on to graduate.

While withdrawing from college may be a fairly obvious indicator of dissatisfaction with the college experience or a lack of adjustment, other sequelae of student stress may be more insidious and difficult to observe. Dyson and Renk (2006) focused on the relationship between

stress and psychological adjustment in sample of 74 freshman students, specifically the manifestation of depressive symptomatology. Examining both family- and college-related sources of stress, they used the Beck Depression Inventory (BDI-II; Beck et al., 1996) as a measure of depression. Both sources of stress were positively associated with higher levels of depressive symptoms.

Similarly, Roddenberry and Renk (2010) observed detrimental psychological effects of stress in college students, as well as a positive relationship between experienced stress and physical illness. A measure of general stress was administered (Perceived Stress Scale; Cohen et al., 1983; Cohen & Williamson, 1988), as well as a measure of academic-related stress (Academic Stress Scale; Kohn & Frazer, 1986). Three subscales were utilized (Anxiety, Depression, and Somatization) of the Brief Symptom Inventory (BSI; Derogatis, 1993) as an outcome measure of psychological symptomatology, and the Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982) to examine reported symptoms of physical illness. Students were also asked about the number of doctor visits scheduled within a two-week period to capture their utilization of health services.

Higher levels of general stress were positively associated with an increased number of symptoms of physical illness, as well as a higher number of endorsed psychological symptoms on the BSI. Higher levels of academic-related stress were related to a greater number of reported psychological symptoms. Interestingly, the experience of physical and psychological symptoms was unrelated to utilization of health services. The results indicated that students may perceive seeking out health services as an additional source of stress—particularly in the midst of numerous academic demands—and thus avoid scheduling appointments, even when experiencing physical or psychological symptoms. Thus, the results suggest that students' stress

levels impact their well-being in college—and perhaps even interfere with their ability to engage in adequate self-care and help-seeking behaviors.

Oaten and Cheng (2005) took a quasi-experimental approach to longitudinally assessing the effects of academic stress on functioning in college students. Two groups of students were compared (total N=57): an exam stress group (assessed at an exam-free baseline and at the beginning of an exam period) and a control group (assessed during two low-stress, exam-free periods. Students were given measures of perceived stress (Perceived Stress Scale; Cohen et al., 1983; Cohen & Williamson, 1988), trait anxiety (Depression Anxiety Stress Scales; Lovibond & Lovibond, 1995) and reported self-control (Tangney-Baumeister Scale; Tangney & Baumeister, 1998) (at Time 1 only), emotional distress (General Health Questionnaire; Goldberg, 1972), and questions about self-regulatory/self-care behaviors (e.g., cigarette smoking, alcohol use, caffeine use, exercise, dietary habits). A laboratory test of self-control (the Stroop Test) was administered at Time 1 and Time 2.

The results indicated that perceived stress increased from Time 1 to Time 2 for those students in the exam stress group, and that these students displayed poorer self-regulatory behaviors during exam time, including increased smoking, increased caffeine consumption, increased junk food intake, decreased healthy eating habits, decreased exercise, and decreased self-care (e.g., less time devoted to cleaning at home and personal hygiene). Students also reported feeling less emotional control, spending more money without thinking about doing so, oversleeping more, and neglecting other obligations. A poorer performance on the Stroop Test during exam time was also observed. The control group did not exhibit these changes in behavior patterns. These results support the notion that managing high stress depletes students' ability to engage in self-regulatory behaviors and exhibit adequate self-control. Alternatively, the increases

in unhealthy behaviors could be more indicative of efforts to cope with stress, rather than reflecting a deficit in self-control. Either interpretation highlights the potentially detrimental impact of academic stress on college student functioning and adjustment.

### Coping with Stress

The existing literature provides ample evidence to suggest that college life can be an extremely stressful experience for some students (Ross et al., 1999; Misra & Castillo, 2004; Dusselier et al., 2005). However, not all students experience stress to the same extent, and some are able to avoid the majority of its more negative outcomes. Thus, one point of interest for researchers is what influential factors distinguish students who adaptively manage stress from those who are less successful in doing so.

Lazarus and Folkman (1987) posited that the experience of stress is dependent on several factors. Causal antecedents of a stress reaction may be person variables, such as one's sense of control over a situation, or beliefs about the world and one's ability to handle problems; or environmental variables, such as the demands of a situation and the resources available to deal with these demands (e.g., a social support network). In part, these factors exert their influence on the emotional and physiological experience of stress through the mediating role of coping. Lazarus and Folkman argue that coping impacts the stress response by either changing the way antecedent person and environmental variables relate to each other (problem-focused coping) or by managing the resulting emotional distress (emotion-focused coping). The degree of stress experienced varies from person to person based on their appraisals of their ability to cope and how they employ these coping skills. Coping variables are influenced by various factors, such as one's sense of control over stressors, and what demands are present in the environment.

Lazarus and Folkman's theory (1987) suggests that coping need not be a reaction to stress, but can actually impact the degree to which the individual experiences a stress response. The theory also suggests that if situational demands exceed one's perceived coping resources, the resulting stress will be greater. According to Lazarus and Folkman's model, coping (and perceived coping options available) plays a critical role in the stress experience. The model also stipulates that causal person and environmental variables influence one's appraisal of coping options, which helps to explain the observed individual variation in perceived stress.

Theorists and researchers have identified different ways of coping, and have used various systems of classifying coping strategies. Some researchers simply elect to categorize coping styles as adaptive or maladaptive, defined primarily based on outcome (Giancola et al., 2009; Wei, Heppner, Russell, & Young, 2006). In other words, adaptive coping strategies lead to more positive, healthy outcomes, while maladaptive coping is defined by the resulting negative consequences. However, Lazarus and Folkman (1987) caution against defining coping strategies as functional or dysfunctional, as these labels are context-ignorant. For example, a given coping strategy may be adaptive in particular situation in the short-term, but more problematic if used universally and chronically.

Lazarus and Folkman's model (1987; Folkman & Lazarus, 1985) contends that all coping styles are essentially either problem-focused (specifically targeting the problematic aspects of the situation) or emotion-focused (targeting the resulting emotional distress). Through factor analysis of their 60-item Ways of Coping questionnaire (1980), the authors identified eight more specific subscales: confrontive coping, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving, and positive reappraisal.

Carver, Scheier, and Weintraub (1989) took a similarly multidimensional approach to categorizing coping styles. In response to Lazarus and Folkman's empirically-driven approach for deriving subscales, Carver et al. attempted to use theory to guide their identification of coping styles. The resulting categories were active coping (i.e., taking steps to remove the stressor or relieve its effects), planning, suppression of competing activities (i.e., putting other things aside to focus on dealing with the stressor), restraint coping (avoiding distractions to focus on managing the stressor), seeking instrumental support (e.g., asking others for advice or information), seeking emotional support (e.g., asking others for moral support or sympathy), positive reinterpretation and growth (i.e., redefining in a positively valenced way), acceptance, turning to religion, focusing on and venting of emotions, denial, behavioral disengagement (i.e., giving up), mental disengagement (i.e., distraction from stressor), substance use disengagement. Interestingly, there is substantial definitional overlap between the subscales empirically derived by Lazarus and Folkman, and those theoretically derived by Carver et al.

### **Coping in college students.**

Several studies have attempted to examine coping strategies employed by college students, and which of these are most predictive of college success and failure, respectively (Aspinwall & Taylor, 1992; Devonport & Lane, 2006; Wei, Heppner, Russell, & Young, 2006; Wei, Heppner, & Mallinckrodt, 2003). As noted previously within this section, different approaches to categorizing coping styles have been employed; for example, using multidimensional scales (e.g., Ways of Coping Instrument; Folkman & Lazarus, 1980; the COPE; Carver et al., 1989) or dichotomized classifications of coping (see Wei et al., 2006; Giancola et al., 2009). One challenge in integrating findings is the diversity in the measures used, though some patterns do emerge when comparing studies side by side. Another concern is that

studies that only include a limited number of coping styles may be masking more nuanced and qualitatively distinct coping strategies that contribute to adjustment or maladjustment.

For example, Wei et al. (2006) focused exclusively on ineffective coping, using the Suppressive and Reactive subscales from the Problem-Focused Style of Coping (PF-SOC; Heppner et al., 1995). The conceptualization of ineffective coping was dichotomous: the PF-SOC Reactive and Suppressive subscales examine tendencies to respond impulsively and emotionally to stressors or to deny and avoid problems to cope, respectively. Attachment was assessed using the ECRS (Brennan et al., 1998). The sample was comprised of predominantly freshman undergraduates ( $n=372$ ), assessed at two time points. Ineffective coping at Time 2 was positively related to depression at Time 2, and predicted depression in a structural equation model. The findings highlight the impact that maladaptive coping can have on psychological functioning. Though these results are certainly informative, the study focused on just one facet of coping—maladaptive emotional responses to stress. Examining the roles of other coping styles might account for more variance in depressive symptomatology in students.

Wei et al. (2003) studied emotionally suppressive and reactive coping styles, but also included a measure of perceived coping. Additionally, this study made use of broader assessments of psychological maladjustment (i.e., anger, depression, anxiety, interpersonal problems). The two coping-related measures used were the Problem-Solving Inventory (PSI; Heppner, 1988), and the Suppressive and Reactive subscales from the PF-SOC (Heppner et al., 1995). The PSI assesses an individual's perceived ability to manage problems. The findings of the study suggest that greater use of either reactive or suppressive coping styles is predictive of psychological distress in students. Perceptions of an inability to cope with problems are also related to greater distress. In keeping with Lazarus and Folkman's theory (1987), perceived

coping abilities appear to modulate stress reactions to problems, such that individuals who believe they lack sufficient coping resources experience greater stress. In turn, these individuals are more likely to experience the detrimental consequences of stress.

Aspinwall and Taylor (1992) studied a wider range of coping strategies, and their impact on college adjustment and health in students. Lazarus and Folkman's Ways of Coping Instrument (1980) was factor analyzed in a sample of 672 freshmen. Four factors were extracted: active coping, avoidant coping, seeking support, and meaning (i.e., finding meaning in life). Results indicated that avoidant coping was predictive of poorer college adjustment, while active coping predicted more successful adjustment. Seeking social support was also associated with better adjustment. Nonuse of avoidant coping, use of social support seeking, and use of active coping were negatively related to health problems. The inclusion of a broader array of coping strategies allows for a more thorough sampling of the universe of content for the construct of coping. Notably, Aspinwall and Taylor studied both the coping strategies often considered ineffective (e.g., avoidant coping), and those believed to be more adaptive (e.g., active coping, seeking support). This could be considered an improvement over studies that have focused solely on maladaptive strategies, as it is useful to understand factors that influence adjustment, as well as maladjustment.

### **Predicting coping in college students.**

The findings discussed in the above section suggest that effective coping and stress management are critical in college students. While it seems clear that there is individual variation in coping styles, less is known about what qualities predict use of particular coping strategies. Understanding the role of these influential variables could be useful for designing programs that

aim to facilitate college adjustment. Various predictors of coping in college students have been studied in the past two decades. Some of the variables examined include optimism, control and self-esteem (Aspinwall & Taylor, 1992); gender role orientation (Dyson & Renk, 2006); perfectionism (Wei et al., 2006); family structure (Perosa & Perosa, 1993); and attachment style (Wei et al., 2003; Li & Yang, 2009).

Attachment has received increasing attention in recent years as a possible predictor of coping styles in college students. A few key aspects of attachment theory make it particularly relevant for understanding coping and adjustment in emerging adults. First, the theory posits that attachment security facilitates exploration (Ainsworth, 1979; Lopez & Brennan, 2000). Because emerging adulthood is a period marked by substantial exploration and change, secure emerging adults may be more comfortable negotiating the challenges of the adolescent to adult transition (Arnett, 2000; Seiffge-Krenke, 2006b).

Emerging adulthood and starting college typically involve increasing autonomy from one's family of origin (e.g., moving out, increasing financial independence, developing an identity separate from one's parents). These transitions also often entail new social demands—meeting new people, engaging in novel forms of socializing, finding a romantic partner (Arnett, 2000; Seiffge-Krenke, 2006a). Attachment theory has particular implications for how individuals cope with the stress arising from parental separation, as well as for the ways that people connect with others and form new attachment bonds (Seiffge-Krenke, 2006a; Riggs & Han, 2009). Attachment may play an especially influential role in the selection of coping strategies and subsequent adjustment during this transitional period.

### **Attachment Theory: An Overview**

Parent-child attachment models, as pioneered by Bowlby (1973; 1982) and Ainsworth (Ainsworth et al., 1978), suggest that early childhood bonding with primary caregivers establishes a template (internal working model) that guides interaction styles later in life. Secure attachment to a parent allows a child to comfortably explore the environment, with the understanding that he can safely return to the secure base (i.e., the parent) for comfort, particularly under stress. To the extent that a secure parent-child bond is established, the attachment system serves an evolutionary function. Essentially, the child comes to understand that the parent will reliably intervene when the child communicates a need for closeness and assistance in the face of threats. Within this relational context, the parent provides the protection necessary for the infant's survival, and the infant can confidently engage in the independent exploration required for successful development (Lopez & Brennan, 2000).

Alternatively, insecurely attached infants are typically anxious about exploration of their surroundings. They appear either emotionally unresponsive to parents and strangers alike (avoidant attachment), or highly distressed by parental absence, but resistant and agitated upon the parents' return (anxious-ambivalent attachment) (Ainsworth et al., 1978; Main & Solomon, 1986; 1990).

In the case of insecure attachment, the infant experiences the primary caregiver as inconsistently and unpredictably responsive during stressful situations. As a result, the infant comes to rely on alternative strategies to elicit parental proximity and care, and to manage its internal reactivity to stress. Infants classified as anxious-ambivalent (alternatively referred to as anxious-resistant or ambivalent-resistant) tend to rely on hyperactivation of the attachment

system, whereas avoidantly attached infants employ the strategy of deactivation/suppression of the system (Lopez & Brennan, 2000). It has been speculated that hyperactivation may serve to elicit the attention and proximity of insensitive/unresponsive caregivers.

For avoidant infants, suppression of the attachment system may be construed as adaptive in the short-term in that it may secure a minimal degree of proximity without risking rejection or abuse from the unresponsive caregiver. However, the infant may learn to rely on this strategy exclusively, routinely suppressing attachment needs in all but the most threatening situations (Ainsworth, 1979; Lopez & Brennan, 2000; Main, 1981).

### **The internal working model.**

The concept of the internal working model (IWM) is central to attachment theory. Bowlby (1973) posited that there are two dimensions to this internalized “template:” 1) a concept of others (e.g., “Can I expect reliable support, comfort, and protection from others?”), and 2) a concept of the self (e.g., “Am I the sort of person that others will respond to helpfully?”). Over time, children’s experiences with their primary caregivers inform their beliefs and expectations about themselves, and about the social world around them (Bartholomew & Horowitz, 1991).

For the securely attached child, emotions expressed during stressful or frustrating situations serve to signal the parent that soothing and protection are needed. The experience of these emotions comes to reliably predict a parent’s helpful intervention. The expectation that an attachment figure will provide comforting when signaled allows for confident exploration, as well as facilitating the development of self-soothing and distress tolerance (Dykas & Cassidy, 2011).

Such experiences contribute to the formation of a secure attachment IWM, one that contains a positive representation of the self (e.g., "I am the sort of person others will help when I need it;" "I can manage stress") and of others (e.g., "I can expect that others will be there for me when I need help"). Internalization of more negative attachment experiences leads to a more insecure IWM (e.g., "I am unworthy of help and protection, and others cannot be relied upon during times of stress and discomfort"). The information housed in the IWM is then referenced in later interactions, and guides cognitive, emotional, and behavioral responses (Bartholomew & Horowitz, 1991; Delius, Bovenschen, & Spangler, 2008).

### **Attachment Beyond Childhood**

Elaboration of attachment theory and supportive research suggest that the aforementioned attachment styles also apply to adolescents and adults and their affective and behavioral patterns (Hazan & Shaver, 1987; Ainsworth, 1989; Collins & Read, 1990; Vivona, 2000). Research has demonstrated that associations exist between adult attachment status and a variety of outcomes, including behavior in romantic relationships (Hazan & Shaver, 1987; Collins & Read, 1990), drinking-related problems (McNally, Palfai, Levine, & Moore, 2003), substance use (Kassel, Wardle, & Roberts, 2007), health conditions (McWilliams & Bailey, 2010), and psychopathology (Fortuna & Roisman, 2008).

Such studies lend credence to the idea that early parental attachment styles (and corresponding IWMs) can have long-lasting effects and are relatively stable over time. Studies have also demonstrated that a substantial portion of adults are insecurely attached. Using a national sample, Mickelson, Shaver, and Kessler (1997) found that 59% of adults were categorized as securely attached, and 25% and 11% were classified as avoidantly attached and

anxiously attached, respectively. Vivona (2000) used the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) as a measure of attachment, and found slightly higher levels of insecurity among college students (avoidant: 31%; anxious-ambivalent: 19%). These prevalence rates suggest that nearly half of adults may face the potentially unfavorable outcomes associated with attachment insecurity.

#### **Adolescent and adult attachment: Dimensions or categories?**

Attachment was originally conceived of as a tripartite categorical construct (Ainsworth et al., 1978). Ainsworth and her colleagues set a precedent in attachment research with their use of the Strange Situation paradigm, having coders rate a child on a variety of attachment-relevant indices while observing interactions with his or her mother, then assign the child to one of the three categories based upon these ratings.

The rating scales used for classification are typically dimensional in nature, leading some theorists to wonder if a continuous model would better capture the construct of attachment security than a categorical model (Fraley & Spieker, 2003). Ainsworth et al. argued that the three-category system allowed for a greater understanding of *patterns* of attachment behavior, rather than losing these meaningful, correlated behaviors in a heap of dimensional ratings (Ainsworth et al., 1978; Fraley & Spieker, 2003).

Fraley and Spieker (2003) attempted a taxometric analysis of infant behavior in the Strange Situation to address the continuous versus categorical debate, using more sophisticated statistics to test the natural grouping of attachment behaviors than were previously available at the time of attachment theory's inception. Minimal evidence was found for a categorical model of attachment security; rather, they argued that the data better supported a model that would

combine various dimensions of the attachment construct into a meaningful rating (e.g., a linear combination of a Proximity Seeking vs. Avoidance dimension and a Use of Angry/Resistant Strategies dimension). The authors emphasized that their findings and suggestions are not a challenge to Ainsworth's original ideas, but rather a re-evaluation of how individual differences in attachment might be distributed.

Fraley and Spieker's study suggested that infant attachment security might be better represented dimensionally rather than categorically, but does a continuous model work for understanding adolescent and adult attachment? Certainly, both categorical [Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985); Adult Attachment Interview as a Questionnaire (AAIQ; Crandell, Fitzgerald, & Whipple, 1997)] and dimensional [Parental Attachment Questionnaire (PAQ; Kenny, 1987); Continued Attachment Scale (CAS; Berman, Heiss, & Sperling, 1994)] measures of attachment in adolescents and adults exist, and are utilized in contemporary research. Using a similar approach to Fraley and Spieker (2003), Fraley and Waller (1998) used taxometric analysis procedures to examine whether attachment security in emerging adults was better represented by a categorical or continuous model. The Relationship Scales Questionnaire (RSQ; Griffin & Bartholomew, 1994) was administered, the scoring of which yields both categories and dimensions, to college students. Responses were analyzed using taxometric methods. The results suggested that a dimensional model was a more appropriate fit to the data than a categorical model.

Stein and her colleagues (2002) took a different approach to the categorical versus dimensional debate. The study examined agreement in category classification between several adult attachment self-report measures. Measures were administered to a community sample of

adults, and analyzed. Overall, agreement between the attachment category classifications was very low across measures.

Stein et al. noted that classification of participants by categories presented some challenges. For instance, assignment of participants who were just above or below the cut-off score to a given category seemed somewhat arbitrary; some participants also had elevated scores for multiple attachment styles, making it difficult to categorize them cleanly. Given the results, it was suggested that adult attachment is perhaps better modeled on a continuum, one that would allow respondents to fall along dimensions of attachment security without masking the variation among individual responses. A system of assigning respondents to attachment categories might arbitrarily group together individuals with subtly different attachment styles, ignoring the nuances of each individual's attachment security.

Ravitz and colleagues (2010) suggest that a dimensional approach is perhaps best suited for research purposes, as it allows for participants' individual differences to come across in the data. Conversely, assignment to a specific attachment category (e.g., secure, anxious-ambivalent) might have greater utility clinically, much as a medical or psychiatric diagnosis provides a starting framework from which a clinician can conceptualize and select treatment tools.

In an effort to apply the dimensional approach to understanding attachment to an adolescent and emerging adult population, Kenny (1987) developed the Parental Attachment Questionnaire, a self-report measure for young adults that includes several subscales to assess the various facets of the parent-child attachment bond. In addition to a dimensional rating for overall attachment security, the measure yields scores on three underlying dimensions of parental attachment: the affective connection to the parent, the degree to which one's parent facilitates

independent exploration, and the degree to which the adolescent or emerging adult utilizes the parent as a source of social support. Kenny developed the PAQ with Ainsworth et al.'s (1978) original theoretical bases in mind, but found a dimensional model of measurement was most appropriate for capturing the individual differences in attachment style in a young adult population.

Given the literature on measuring adolescent and adult attachment, a dimensional approach to assessing attachment security was deemed most appropriate for purposes of this study, though a thorough understanding of Ainsworth's (1978) original categories and theoretical underpinnings obviously informs the present study's construction and hypotheses. Kenny's Parental Attachment Questionnaire (1987) also has the advantage of being specifically developed for use on an adolescent and emerging adult population, with emphasis on the parental relationship (versus romantic, peer, or other attachment bonds). Ravitz et al. (2010) suggest that a dimensional, self-report measure of attachment is particularly suited for studies in which attachment is a primary variable, but lengthier assessment methods (e.g., observational or interview assessments) are not feasible or are too burdensome for participants. It should be noted that, although forthcoming review of the literature periodically alludes to the categorical system of attachment, the current study is chiefly concerned with the dimensions underlying these attachment classifications. Lopez and Brennan (2000) encourage such an approach, positing that a focus on these latent dimensions is a more useful way of conceptualizing attachment.

### **Attachment and Stress**

Mikulincer and Florian (1998) posited that one's attachment style contributes to the development of "inner resources," which are activated and used under stress. When stressful

situations arise, individuals refer to the internal working models developed early in life and access the “inner resources” that have developed out of early attachment bonds (Ainsworth, 1989; Mikulincer & Florian, 1998).

During transition periods, such as starting college, the experience of stress activates the attachment system, making IWM representations especially relevant in guiding the way that individuals manage new challenges. Beginning college typically entails some degree of physical separation and independence from one’s family of origin, as well as meeting and interacting with many new people. In this sense, the college transition period can be viewed as analogous to the “Strange Situation” created in Ainsworth’s initial experiments on parental attachment (see Ainsworth et al., 1978; Kenny, 1987; Kenny & Donaldson, 1991).

While securely attached adolescents and adults likely possess the behavioral strategies and affective resources to successfully navigate stressful transitional periods, their insecure counterparts may have less adaptive ways of coping with stress and change (Ainsworth et al., 1978; Lopez & Gormley, 2002; Lopez & Brennan, 2000). Secure attachment appears to facilitate comfortable exploration in both infancy and adulthood. Secure individuals have established the expectation that they can solicit soothing from attachment figures when they encounter stressors in the course of exploring new environments (Ainsworth, 1979; Seiffge-Krenke, 2006a). Consequently, securely attached individuals will likely feel more at ease meeting the new demands of the college environment than those with more insecure parental attachment.

Drawing from attachment theory, the subjective experience of stress during the transition to college should be central to the observed relationship between parental attachment and college adjustment. Stress triggers a reference to one’s attachment representations, which in turn

influences how an individual approaches, understands, and adjusts to challenges (i.e., stressors of the new college environment) (Bowlby, 1982; Lopez & Brennan, 2000). If stress were not experienced during the college transition, attachment styles and the associated inner resources should, in theory, be less relevant to the individual, and the relationship between attachment and adjustment should disappear, or at least significantly attenuate.

To date, most studies investigating the impact of parental attachment style on functioning in college students have assumed that the transition to college will evoke a significant degree of stress. This may not be true of all individuals. As Lazarus and Folkman theorized (1987), a number of interacting personal and contextual factors influence the degree of stress response. The specific examination of subjective stress could be useful in clarifying the nature of the association between parental attachment and college adjustment.

### **Attachment, Coping, and Adjustment**

Secure attachment appears to contribute successful college adjustment (Wei, Russell, & Zakalik, 2005; Marmarosh & Markin, 2007), as well as predicting which coping strategies are employed (Li & Yang, 2009). Because coping, in turn, is associated with college adjustment and psychological wellbeing in students (Aspinwall & Taylor, 1992; Dyson & Renk, 2006), it may be that attachment exerts its influence on adjustment through coping.

Several authors have proposed potential coping-related mediators of the relationship between attachment style and college adjustment, essentially attempting to operationalize what comprises the “inner resources” conceptualized by Mikulincer and Florian (1998). For instance, studies have evaluated the mediating effects of social support seeking and social competencies (Wei et al., 2005a; Mallinckrodt & Wei, 2005), self-regulation and self-organization (Lopez,

Mitchell, & Gormley, 2002), and emotion regulation and reactivity (Wei, Vogel, Ku, & Zakalik, 2005).

Lopez and colleagues (2002) conceptualized self-organization as a mediator of the relationship between attachment style and distress in a sample of college students (N=127). Here, self-organization was defined as an amalgam of self-regulatory capabilities, including the ability to cope without avoidance or impulsivity, and the capacity to experience a stable sense of self. The Experiences in Close Relationships Scale was used to measure attachment orientation (ECRS; Brennan et al., 1998), and distress and adjustment problems were assessed with the Personal Problem Inventory (PPI; Cash, Begley, McCown, & Weise, 1975). Attachment anxiety accounted for 12% of the variance in student distress. However, attachment anxiety was no longer a significant predictor of distress when self-organization was included in the model, supportive evidence for mediation. A critical limitation of this study is that the authors focused on largely cognitive coping processes, though attachment involves major affective and social components (Bowlby, 1982).

Wei et al. (2005b) proposed a different mediation model, studying attachment, affect regulation strategies, and psychological outcomes in a predominantly freshman sample of 229 undergraduates. Attachment was measured with the ECRS (Brennan et al., 1998). Two maladaptive emotion regulatory strategies were examined, using the Differentiation of Self Inventory (DSI; Skowron & Friedlander, 1998): emotional cutoff and emotional reactivity. Individuals who use emotional cutoff tend to suppress stress and negative feelings and withdraw from others. Those who cope with stress using emotional reactivity tend to overreact to negative emotions in order to secure the presence and support of others. Emotional cutoff fully mediated the relationship between attachment avoidance and mood, while emotional reactivity fully

mediated the attachment anxiety-mood association. The models explained 36% of the variance in negative mood. Emotional reactivity and emotional cutoff partially mediated the associations between attachment anxiety and interpersonal problems, and attachment avoidance and interpersonal problems, respectively. The attachment orientations and emotional responses accounted for 75% of the variance in interpersonal problems. Though mediators in this study were limited to affective management of stress, the findings suggest that distinct coping patterns exist at varying levels of attachment security in students.

The majority of studies on the topic have taken similar approaches, investigating the role of a specific coping strategy in isolation. Others have focused on specific traits that might predispose one to coping with stressors effectively or ineffectively (e.g., maladaptive perfectionism, Wei et al., 2006). However, few, if any, studies have simultaneously examined various coping styles to see which are associated with attachment security in college students.

The findings of such an investigation would allow for the development of coping profiles (including both strengths and deficits) for students with varying degrees of attachment security, and would highlight which of these styles are most predictive of success or failure in the college environment. This knowledge could be readily incorporated into prevention and intervention programs that aim to facilitate a smooth and successful transition to college.

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**Running head: ATTACHMENT, COPING, AND COLLEGE ADJUSTMENT**

**Parental Attachment and College Adjustment in Emerging Adults:  
The Roles of Perceived Stress and Coping**

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### Introduction

A considerable amount of research has been devoted to the study of individual attributes that impact adjustment during major life transitions (McDougall & Hymel, 1998; Hopwood et al., 2011; Neff & Broady, 2011; Keeton, Perry-Jenkins, & Sayer, 2008; Fouad & Bynner, 2008). One of the most critical of these transitions is the time between adolescence and adulthood, typically between 18-25, involving identity and role exploration, individuation from family of origin, and negotiation of other key developmental tasks (Arnett, 2000). This time period is also formative in the emergence of more stable personality traits (Hopwood et al., 2011). During this period, individuals are no longer completely dependent on their parents, but have not taken on the full range of responsibilities that come with adulthood. Arnett (2000) coined the term “emerging adulthood” for this pivotal period of development and self-exploration.

The transition to adulthood can take many forms and there is considerable variability in the activities pursued by emerging adults (e.g., working full-time, going to college, living with parents, cohabitation with a romantic partner). The exploratory nature of this phase makes it difficult to pinpoint just what a “normative” trajectory is (Arnett, 2000). One increasingly common path is higher education. The percentage of 18 to 24-year-olds enrolled in two-year and four-year postsecondary institutions in the US increased from 36% in 1999 to 41% in 2009 (NCES, 2011).

Though college enrollment is on the rise, nearly half of students fail to attain a degree within six years of starting college (NCES, 2003). While factors such as academic ability certainly influence retention, stress also appears to play a role in college attrition. A longitudinal study of freshman males found that reduced academic ability (i.e., high school GPA and SAT scores) was predictive of attrition, as might be expected. Additionally, the results revealed that

increased stress and social isolation in freshman year also placed students at greater risk for dropping out later (Daugherty & Lane, 1999). Such data highlight the critical impact college stress can have on academic success and achievement.

Stress may contribute to academic difficulties through a variety of mechanisms. In college samples, stress has frequently been linked to an increase in physical and psychological problems (Roddenberry & Renk, 2010; MacGeorge, Samter, & Gillihan, 2005; Dyson & Renk, 2006). For example, Roddenberry and Renk (2010) found that greater stress in students was significantly linked to higher scores on anxiety and depression inventories ( $r=.54$  and  $.57$ , respectively). The study also demonstrated a positive association between stress and endorsement of physical symptoms ( $r=.37$ ).

Students themselves recognize the detrimental impact of stress. In a large-scale survey of college students by the American College Health Association, undergraduate students ranked stress as the number one impediment to their academic success (ACHA, 2009).

Freshmen may be especially vulnerable to the adverse consequences of stress. As they begin their transition to college, freshmen are exposed to a variety of new challenges and experiences. Significant adjustment problems have been identified in freshmen, more so than in upperclassmen (Lapsley, Rice, & Shadid, 1989). As with the general college population, stress has been identified as a positive predictor of both physical and psychological symptoms in samples of freshman students (Miczo, Miczo, & Johnson, 2006; Dyson & Renk, 2006). For example, Miczo et al. (2006) found that perceived stress in freshmen at Time 1 was significantly related to symptoms of physical illness at Time 2 ( $r=.54$ ). Stress at Time 2 was also positively associated with symptom frequency ( $r=.61$ ) and number of illnesses ( $r=.32$ ) at Time 2.

Stress can have profoundly detrimental effects on college adjustment (Miczo et al., 2006; MacGeorge et al., 2005; Roddenberry & Renk, 2010). However, while stress appears to be a common concern and experience for students (ACHA, 2009), it does not necessarily result in significant academic problems or attrition. Some students may possess traits and resources that facilitate successful stress reduction and management. Given the potential applications for intervention, research has often aimed to identify characteristics that distinguish students that cope well with the college transition from those that do not (Giancola, Grawitch, & Borchert, 2009; Aspinwall & Taylor, 1992; Sasaki & Yamasaki, 2007).

The research has focused on cognitive, emotional, and behavioral strategies for coping with stress. Findings suggest that avoidant coping is positively associated with maladjustment in freshman students, while more active coping (e.g., planning, problem-solving) is related to successful college adjustment (Aspinwall & Taylor, 1992; Dyson & Renk, 2006). For example, Dyson and Renk (2006) found that higher levels of avoidant coping were associated with more depressive symptomatology ( $r=.28$ ). A model including stress and coping strategies as predictors explained 33% of the variance in depressive symptoms in freshman students, and use of avoidant coping emerged as a significant predictor.

The selection of coping strategies is subject to a number of intrapersonal and social variables. Understanding these influences could inform prevention and intervention programs to reduce college stress and facilitate adjustment. Furthermore, it is possible that targeting these influential variables as well might produce more durable change in coping strategies. Several of these constructs have been identified and studied, including maladaptive perfectionism (Wei, Heppner, Russell, & Young, 2006); masculinity and femininity (Dyson & Renk, 2006); optimism, self-esteem, and locus of control (Aspinwall & Taylor, 1992). Adult attachment style

(Wei, Heppner, & Mallinckrodt, 2003; Li & Yang, 2009) has also been studied in relation to coping.

The key features of attachment provide clues as to why the construct may play a particular role in influencing college coping. Attachment theory focuses on early socio-emotional bonds, which then form templates that guide relationships and interactions through adulthood (Bowlby, 1973; Ainsworth, Blehar, Waters, & Wall, 1978; Bartholomew & Horowitz, 1991; Vivona, 2000). Greater security in the parent-child bond facilitates eventual security in interactions with others, allowing for a sense of closeness, safety, and interdependence in relationships, without fears of rejection, abandonment, over-intrusiveness, or inconsistency (Hazan & Shaver, 1987; Lopez & Brennan, 2000). Secure individuals are better able to confront challenges and novelty, in part because they recognize that they can always turn to the “secure base” of their attachment figures when in distress (Ainsworth, 1979; Seiffge-Krenke, 2006).

Greater attachment security allows individuals to develop the necessary self-confidence to explore their environments, knowing that they can still elicit support from attachment figures as necessary (Ainsworth, 1979; Lopez & Brennan, 2000). This openness to exploration and experimentation may allow securely attached freshman students to cope better with the transition to college.

Beginning college also often involves some degree of separation from one's parents (Arnett, 2000), and a tolerance for separation from attachment figures is a central feature of secure attachment (Ainsworth et al, 1978). College also introduces emerging adults to a number of new social contexts and demands. Research suggests that attachment security may better prepare individuals to navigate these social facets of the college experience (Mallinckrodt &

Wei, 2005). Indeed, the increased autonomy from parents and the introduction to new people inherent to the college experience parallel some of the key challenges presented in the Strange Situation paradigm used to study early attachment security (Ainsworth et al., 1978; Kenny, 1987).

Attachment style has been consistently linked to college adjustment (Mattanah, Lopez, & Govern, 2011; Marmarosh & Markin, 2007; Lopez, Mitchell, & Gormley, 2002). For example, Marmarosh and Markin (2007) administered the Experiences in Close Relationships Scale (ECRS; Brennan, Clark, & Shaver, 1998) as a measure of personal attachment, and the Social Group Attachment Scale (Smith, Murphy, & Coates, 1999) to assess attachment to groups in a sample of undergraduates. The Student Adaptation to College Questionnaire (SACQ; Baker & Syrik, 1989) was used as a measure of college adjustment. Attachment accounted for 26% of the variance in adjustment, while group attachment explained an additional 15% of the outcome variance. The results support the notion that attachment can have a substantial impact on college adjustment.

The demonstrated association between parental attachment and selection of coping strategies suggests that a mediation model may exist, in which coping styles mediate the attachment-adjustment relationship. A secure parental attachment facilitates the use of healthier, more appropriate coping strategies, which in turn facilitates successful adjustment to college. While several similar models have been tested, the proposed models have typically focused on a narrow range of coping strategies (e.g., affect management, factors related to use of social support) (Wei, Vogel, Ku, & Zakalik, 2005; Mallinckrodt & Wei, 2005). The focus of the present research was to examine parental attachment as a predictor of college adjustment, while examining a broader array of coping styles as mediators.

The present study also examined the role of stress in the parental attachment-college adjustment relationship. Stressful events are thought to activate an attachment system, developed through interactions with one's primary caregivers (Bowlby, 1982). When an emerging adult's system is triggered, references are made to an attachment template formed from past caregiver and relationship experiences. In secure emerging adults, this internal template should guide them to manage challenges in more constructive, resourceful ways than their insecure counterparts (Mikulincer & Florian, 1998; Lopez & Brennan, 2000).

Based upon attachment theory, the activation sequence should be: 1) individual encounters a stressful challenge, 2) the attachment system is activated, and 3) the attachment system guides which resources and coping strategies are accessed to manage the environment. In turn, the selection of adequate and appropriate coping strategies enables an emerging adult to adjust successfully to the college setting (Aspinwall & Taylor, 1992). The degree of stress perceived by the individual appears to be an active ingredient in this sequence. If a college student did not experience stress while adjusting to the college environment, the attachment system would not be triggered, and perhaps the relationship between parental attachment, coping, and adjustment would diminish or disappear. As such, the present study of the attachment-adjustment relationship would be incomplete without an assessment of perceived stress.

The present study aimed to replicate previous findings that attachment security is positively associated with successful college adjustment. Another primary goal was to investigate a wide range of coping strategies as potential mediators of the attachment-adjustment relationship. Given that attachment is believed to be a largely socio-emotional construct (Bowlby, 1982), it was hypothesized that social and emotional coping styles would be the most

significant mediators of the attachment-adjustment association. However, previous research has linked attachment security to problem-focused coping as well (Scharf, Mayseless, & Kivenson-Baron, 2004). For this reason, the specific pattern of mediating coping styles was examined in an exploratory fashion.

A measure of college adjustment was used that allowed for the examination of the different components of college adjustment (e.g., emotional, social, and academic adjustment). In keeping with the primarily social-affective conceptualization of attachment (Bowlby, 1982), it was hypothesized that parental attachment would demonstrate the strongest association with the social and emotional aspects of college adjustment.

Because stress appears to activate the reference to attachment orientation and thereby influence the selection of coping strategies, it was predicted that perceived stress would moderate the attachment-adjustment relationship, such that the association would be stronger in students who report more subjective stress and reduced in students reporting relatively little stress. The current study also assessed perceived stress, rather than assuming high stress to be inherent to the college transition process, a critical limitation of many previous studies.

A final goal of the study was to replicate previous findings that experienced stress is negatively associated with college adjustment (e.g., Skowron, Wester, & Azen, 2004; Daugherty & Lane, 1999).

The specific hypotheses for the current study were as follows:

1. Parental attachment security [as measured by the Parental Attachment Questionnaire (PAQ; Kenny, 1987)], will predict overall college adjustment [as measured by the Student Adaptation to College Questionnaire (SACQ; Baker &

Siryk, 1989)]. More specifically, parental attachment will predict social and emotional adjustment, as measured by the Social and Personal-Emotional Adjustment indices of the SACQ.

2. Use of coping styles [as measured by 14 scales of the Brief COPE (Carver et al., 1989; 1997)] will mediate the association between parental attachment security and college adjustment. Those coping styles related to social and emotional functioning will be the most significant mediators of the relationship. Social/emotional coping styles would include strategies to solicit support (emotional and instrumental support seeking), and emotion-focused coping strategies (positive reframing, denial, acceptance, venting).
3. Perceived stress [as measured by the Perceived Stress Scale (PSS; Cohen et al., 1983; Cohen & Williamson, 1988)] will moderate the relationship between parental attachment and adjustment. At higher levels of reported stress, stronger relationships will emerge between attachment and social/emotional coping styles. Coping styles will in turn predict adjustment to college.
4. Perceived stress will be inversely related to college adjustment (both the overall adjustment score and the Academic, Social, Personal-Emotional, and Attachment to the Institution indices of the SACQ).

## Method

### Participants

First year full-time students were recruited from a suburban college campus in the Northeast. Three hundred fifty packets were distributed through instructors in the Freshman Seminar program. Of these 350 packets, 117 were returned.

Of this sample, 30.8% of participants identified as Caucasian, 24.8% as Hispanic/Latino, 19.7% as African American, 5.1% as Asian/Asian American, 1.7% as Multiracial, and 8.5% as Other. The final sample was 65% female (N=76) and 35% male (N=41). The mean age of the sample was 18.37 (SD=1.24). Seventeen participants were international students (14.5%). With respect to residence, 58.1% of students lived on campus in residence halls, 3.4% lived in apartments off campus and commuted to school, and 38.5% lived off campus with family. Twenty-eight students (23.9%) reported that they were the first in their family to attend college. Despite the relatively low response rate, there was no data to suggest that participants differed substantially from non-responders.

### Measures

Participants completed a packet that included demographic questions, various measures (described in detail below), and a variety of items related to interactions with friends and family, college adjustment, self-care habits (e.g., sleeping, exercising), alcohol consumption, and campus involvement. For items requiring a specific numeric response (e.g., "On a typical weekday I estimate I spend \_\_\_\_ hours emailing, texting, and instant messaging my family"), participants wrote in their responses. The majority of demographic questions involve selecting

the most appropriate response from a list of response options. All other items are measured on a 5-point Likert-type scale (ranging from 1=strongly disagree to 5=strongly agree).

**Attachment.** Parental attachment was assessed using the Parental Attachment Questionnaire (PAQ; Kenny, 1987). The PAQ is a 55-item self-report measure, with Likert-type response options that range from 1 ("Not at All, 0-10%") to 5 ("Very Much, 91-100%"). The present study included the Combined Parent version of the scale, for which responses apply to the overall relationship with both parents. The PAQ includes three subscales: Affective Quality of Relationships, Parents as Facilitators of Independence, and Parents as Source of Support. The Affective Quality of Relationships subscale contains 27 items, and assesses the nature of the emotional connection with one's parents. The Parents as Facilitators of Independence subscale specifically examines the degree to which young adults describe their parents as promoting separation and individuation. This subscale contains 14 items. The Parents as Source of Support subscale contains 13 items, which assess the degree to which parents are perceived as supportive and helpful, particularly in the face of challenges. There are 25 reverse-scored items on the PAQ. Adequate psychometric properties have been demonstrated for the PAQ (Kenny, 1987; Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2010). Kenny (1987) reported a test-retest reliability of .92 for the whole measure, and a range of .82-.91 for the subscales. Cronbach's alpha for the 3 subscales ranged from .88 to .96. Convergent validity with measures of similar constructs was also reported.

The PAQ was selected for the present study based on its psychometrics, ease of administration (as compared to an interview or longer measure), and because it allows for examination of different facets of attachment. Furthermore, while many attachment scales assess

security in peer and romantic relationships, the PAQ specifically evaluates attachment orientation towards parents, which is the variable of interest in this study.

**Coping.** Coping styles were assessed using the Brief COPE (Carver et al., 1989; 1997), a 28-item scale with 14 subscales related to various styles of coping (Self-distraction, Active Coping, Denial, Substance Use, Use of Emotional Support, Use of Instrumental Support, Behavioral Disengagement, Venting, Positive Reframing, Planning, Humor, Acceptance, Religion, Self-blame). Items are measured on a 4-point Likert scale (1=I don't do this at all; 4=I do this a lot). The Brief COPE has demonstrated adequate internal reliability (Carver, 1997). The scale is derived from Carver's full COPE measure (Carver et al., 1989), which has demonstrated good convergent and discriminant validity.

The COPE inventory (Carver et al., 1989) was created based on Lazarus and Folkman's model of stress (1987), as well as the authors' own studies with behavioral self-regulation. Because Lazarus and Folkman's model was used in the conceptualization of this study, this measure was deemed appropriate. Given the length of the full packet used in the current study, the Brief COPE was selected to ease participant burden.

**College Adjustment.** The Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989) was used to examine college adjustment. The SACQ is a 67-item self-report measure, which generates a Full Scale adjustment score, as well as four subscale scores: Social Adjustment, Personal-Emotional Adjustment, Academic Adjustment, and Attachment (to the institution). The Social Adjustment scale examines how the student is adjusting to the social demands of college. The Personal-Emotional Adjustment subscale assesses indicators of physical and psychological adjustment. Academic Adjustment is a measure of how well the student

believes he is meeting the academic demands of his college. Finally, the Attachment subscale assesses overall satisfaction with the college experience, and specific satisfaction with the institution in which he is currently enrolled. Students indicate the degree to which items are representative of their experience on a 9-point Likert-type scale (1="Applies very closely to me"; 9="Doesn't apply to me at all"). Several items in the measure are reverse scored. The SACQ's psychometric properties have been evaluated, and are considered adequate (Baker & Syrik, 1986; 1989). Specifically, coefficient alphas for the overall measure range from .93-.95, from .84-.88 for the academic adjustment subscale, .90-.91 for social adjustment, .81-.85 for personal-emotional adjustment, and .90-.91 for attachment to the institution. Criterion validity was also demonstrated for the full-scale measure and the 4 subscales.

**Stress.** The Perceived Stress Scale (PSS; Cohen, Kamarch, & Mermelstein, 1983; Cohen & Williamson, 1988) is a 10-item self-report measure that assesses the degree to which one is currently experiencing stress and overload. Responses are rated on a 5-point Likert-type scale, ranging from 0 to 4 (0=Never, 1=Almost Never, 2=Sometimes, 3=Fairly Often, 4=Very Often). In order to capture current levels of perceived stress, responders are asked to provide ratings based on experiences within the last month. Adequate internal reliability (Cronbach's alpha=.89) and construct validity have been demonstrated for the PSS in an undergraduate population (Roberti, Harrington, & Storch, 2006).

### **Procedure**

packets were distributed to undergraduate students enrolled in Freshman Seminar courses during the first semester of their freshman year (at approximately the 10-week mark). Packets were distributed to course instructors. Instructors then offered students the opportunity to

participate. As an incentive for encouraging their students to participate, the instructors with the highest return rates on completed packets were eligible for a gift card prize drawing. For students, participation included them in a raffle for a prize (an Ipod Shuffle). Students were given as much time as needed to complete the packets. They were allowed to complete the packets during class free time or at home, to be returned to instructors upon completion. Following completion of the packets, instructors collected the packets from participating students and returned the forms back to the researchers via mail. There was no penalty for non-participation.

## Results

### Overview of Analyses

Pearson correlations and descriptive statistics were calculated for the primary variables of interest in this study (attachment security, dimensions of attachment security, coping styles, total college adjustment score, scores for each index of college adjustment), as well as demographic variables (age and gender) (see Table 1).

Multiple regression analyses were used to test associations between attachment and college adjustment. The steps proposed by Baron and Kenny (1986) were used to test all mediation models (i.e., the mediating role of coping styles in attachment-adjustment associations). If Baron and Kenny's criteria for mediation were met, a follow-up Sobel test was conducted to evaluate whether the decrease in the unstandardized coefficient (B) of the IV was significant.

In a series of regressions, attachment and the PAQ attachment dimensions were used as predictors of perceived stress. Regression analyses were also used to evaluate the associations between stress and college adjustment. To test the moderating effect of attachment and stress on

coping, a multiplicative composite of attachment and stress variables was created. This composite variable was entered alongside attachment and stress in a multiple regression analysis to test the proposed interaction between attachment and stress.

In all regression models, Bonferroni corrections were employed to minimize family-wise error. The details and results of these analyses are explained further below.

### Hypotheses 1 and 2

#### **Test of mediation: Total PAQ, coping styles, and Total SACQ.**

As shown in Table 2, Total PAQ score was a significant predictor of variability in self-distraction, active coping, denial, substance use, emotional support, instrumental support, behavioral disengagement, positive reframing, and planning. It was also a marginally significant predictor of self-blame. Based upon the results of the regression, these coping styles were excluded from subsequent steps of the mediation analysis.

A multiple regression analysis tested Total PAQ as a predictor of Total SACQ Adjustment. The model was significant [ $F(1, 102)=7.076, p=.009$ ]. Total PAQ score accounted for 6.5% of the variability in Total SACQ Adjustment.

A multiple regression analysis tested those coping styles that met criteria for inclusion as predictors of variability in the outcome variable, Total SACQ Adjustment (Table 3). The model was significant [ $F(10, 106)=2.924, p=.003$ ], with the predictors accounting for 21.6% of the variability in Total Adjustment. Using the corrected alpha, only denial was a significant predictor.

As a final step in the mediation analysis, Total PAQ score and denial were used as predictors, as denial was the only coping style which met criteria for inclusion in the model, with Total SACQ Adjustment score as an outcome variable (Table 4). The model was significant [ $F(2,$

$F(1, 101)=7.697, p=.001$ ], and accounted for 13.2% of the variability in Total SACQ Adjustment. As shown in Table 4, Total PAQ score was no longer a significant predictor of adjustment, and its B was greatly reduced ( $B=.085$ ), relative to that of the initial regression testing Total PAQ as a predictor of adjustment ( $B=.133$ ). Denial emerged as a significant mediator, mediating an inverse association between attachment and adjustment. A Sobel test was employed to evaluate the significance of the mediation. A Sobel test for denial as a mediator demonstrated a statistically significant decrease in B for PAQ Total (test statistic=2.295,  $p=.022$ ). The analysis suggests that denial is a significant mediator of the PAQ Total-SACQ Total Adjustment relationship.

**Test of mediation: PAQ Affective Quality of Relationships, coping styles, and Total SACQ.**

A multiple regression analysis evaluated PAQ Affective as a predictor of the 14 coping styles (Table 5). PAQ Affective was a significant predictor of variability in several coping styles, including self-distraction, active coping, denial, substance use, emotional support, behavioral disengagement, positive reframing, and planning. PAQ Affective was a marginally significant predictor of use of self-blame as a coping strategy.

A subsequent multiple regression analysis evaluated the PAQ Affective dimension as a predictor of Total SACQ Adjustment. The model was significant [ $F(1, 105)=6.669, p=.011$ ], and accounted for 6% of the variability in Total SACQ.

A multiple regression analysis was conducted, predicting Total SACQ scores from those coping styles that met criteria for inclusion. The model was significant [ $F(9, 107)=3.238, p=.002$ ] (Table 6). With a corrected alpha, only denial emerged as a significant predictor of Total SACQ. For this reason, denial was the only mediator included in subsequent steps of the mediation analysis.

PAQ Affective and denial were included in a multiple regression model as predictors of Total SACQ Adjustment. The model was significant [ $F(2, 104)=8.086, p=.001$ ]. As shown in Table 7, the unstandardized coefficient of PAQ Affective in the initial model predicting Total SACQ Adjustment from PAQ Affective ( $B=.184$ ) dropped ( $B=.114$ ), and PAQ Affective was no longer a significant predictor. Furthermore, denial emerged as a significant mediator of the Affective-adjustment relationship, even with a stringent corrected alpha. A Sobel test was conducted to test the significance of the mediation. For denial, the drop in B was significant (test statistic= $2.188, p=.029$ ). Results suggest that denial is a significant mediator of the relationship between the Affective dimension of attachment and overall college adjustment.

**Test of mediation: PAQ Parents as Facilitators of Independence, coping styles, and Total SACQ.**

As seen in Table 8, PAQ Independence was evaluated a predictor of the 14 Brief COPE coping styles in a series of regressions. PAQ Independence was only a significant predictor of two coping styles: active coping and denial. Both were negatively related to PAQ Independence. Only active coping and denial met criteria for this step of the mediation analysis, and were included in subsequent models.

A subsequent multiple regression analysis tested the predictive value of PAQ Independence on the dependent variable, Total SACQ Adjustment. The model was not significant [ $F(1, 109)=.056, p=.814$ ]. Baron and Kenny (1986) suggest that a non-significant result for the IV $\rightarrow$ DV criterion does not necessarily preclude existence of a mediation. For this reason, the final criteria in the mediation analysis procedure were evaluated despite this finding.

As demonstrated in Table 9, an additional regression tested active coping and denial as predictors of Total SACQ Adjustment. The model was significant [ $F(2, 114)=8.758, p<.001$ ],

accounting for 13.3% of the variability in the outcome variable. Denial emerged as a significant predictor of college adjustment.

Table 10 shows the results of a regression model with PAQ Independence and denial as predictors of Total SACQ Adjustment. The model was significant [ $F(2, 108)=6.391, p=.002$ ]. However, PAQ Independence did not evidence a significant reduction in B; rather, the B actually became larger in absolute size in this analysis (in initial analysis,  $B=.062$ ; in present analysis,  $B=-.133$ ). Correspondingly, the p value of PAQ Independence increased in significance in the mediation analysis (from .814 to .603). These findings do not provide support for a partial or full mediation model.

**Test of mediation: PAQ Parents as Source of Support, coping styles, and Total SACQ.**

As summarized in Table 11, the 14 Brief COPE coping styles were used as dependent variables in 14 multiple regression models, with PAQ Support as a predictor for each. PAQ Parents as Source of Support proved to be a significant predictor of several coping styles, including self-distraction, active coping, denial, emotional support, instrumental support, behavioral disengagement, venting, positive reframing, planning, and use of religion. It was a marginally significant predictor of acceptance ( $p=.055$ ). These 11 styles were included in subsequent steps of this mediation analysis.

A regression analysis evaluated the degree to which PAQ Support accounted for variability in the outcome variable, Total SACQ Adjustment. The model was significant [ $F(1, 114)=8.251, p=.005$ ], and accounted for 6.7% of the variability in overall adjustment. The unstandardized coefficient (B) was .339 ( $SE B=.118$ ).

As shown in Table 12, a multiple regression model included the 11 coping styles mentioned above as predictors of Total SACQ Adjustment. The model was significant [ $F(11, 105)=3.039, p=.001$ ]. With the corrected alpha, only denial emerged as a significant predictor.

A final regression model included PAQ Support and denial as predictors of variability in Total SACQ Adjustment, to test indirect effects (see Table 13). The model was significant [ $F(2, 113)=9.896, p<.001$ ]. Denial maintained its significance as a predictor. PAQ Support maintained significance, though its p value increased to .022 (versus the initial .005), and an appreciable decrease in B (from .339 to .268) also occurred. A Sobel test was conducted to test the indirect effect. The test revealed a marginally significant drop in B for PAQ Support (test statistic=1.709,  $p=.087$ ). The results support a marginally significant indirect effect of denial on the relationship between the Parents as Source of Support dimension of parental attachment and overall college adjustment.

#### **Test of mediation: Total PAQ, coping Styles, and academic adjustment.**

The present mediation analysis tested coping styles as mediators of the relationship between total attachment security and the academic dimension of college adjustment. The first step of this mediation analysis requires an evaluation of Total PAQ Attachment as a predictor of each of the coping styles. This step was performed previously (see Table 2 for results).

Total PAQ Attachment was used as a predictor of the outcome variable, Academic Adjustment in subsequent multiple regression analysis. The model was significant [ $F(1, 102)=8.411, p=.005$ ], and accounted for 7.6% of the variance in Academic Adjustment. The unstandardized coefficient (B) of the predictor was .135 ( $SE\ B=.047$ ).

As shown in Table 14, a subsequent multiple regression analysis tested the association between the coping styles which met criteria for inclusion (active coping, denial, substance use,

emotional support, instrumental support, behavioral disengagement, positive reframing, planning, and self-blame) and Academic Adjustment. Based on the corrected alpha, neither the model [ $F(9, 107)=2.586, p=.010$ ], nor any of the coping style predictors were significant. No further steps of a mediation analyses for these variables, as Baron and Kenny's criteria (1986) were not met.

**Test of mediation: Total PAQ, coping styles, and social adjustment.**

As shown in Table 2, the relationships between Total PAQ Attachment and the 14 coping styles were tested in a series of regressions. As shown, 9 coping styles were eligible for inclusion in this mediation analysis: active coping, denial, substance use, emotional support, instrumental support, behavioral disengagement, positive reframing, and planning, and self-blame.

Subsequently, a multiple regression analysis evaluated Total PAQ Attachment as a predictor of variability in Social Adjustment. The model was marginally significant [ $F(1, 102)=3.594, p=.061$ ;  $B=.064 (SE B=.034)$ ], with Total PAQ accounting for 3.4% of the variability in Social Adjustment. Though the relationship was only marginally significant, the final steps of the analysis procedure were completed to test the mediation.

Table 15 shows the results of a regression analysis including the 9 coping styles from step 1 as predictors of the outcome variable, Social Adjustment. The model was significant [ $F(9, 107)=4.470, p<.001$ ], accounting for 27.3% of the variability in Social Adjustment. Only denial emerged as a significant predictor of Social Adjustment, based upon the corrected alpha. As a predictor, denial evidenced a negative association with Social Adjustment, and accounted for 8% of variability in the outcome variable.

Table 16 illustrates the results of a final regression model, with Total PAQ Attachment and denial as predictors of Social Adjustment. The model was highly significant [ $F(2,$

$F(1, 101)=10.012, p<.001$ ]. While denial maintained its significance as a predictor, Total Attachment dropped from significance and exhibited a greatly reduced B, relative to the initial regression model testing the association between Total Attachment and Social Adjustment. A Sobel test was conducted to test the significance of the indirect effect. The results of the test indicated that the partial mediation was significant (test statistic=2.824,  $p=.005$ ), providing support for the mediating role of denial in the Total PAQ-Social Adjustment relationship.

**Test of mediation: Total PAQ, coping styles, and personal-emotional adjustment.**

The results of the regression analyses shown in Table 2 were used to establish which coping styles to include in this mediation model. Nine coping styles were eligible and included in subsequent analyses (see Table 2).

A multiple regression analysis tested the relationship between Total Attachment and Personal-Emotional Adjustment. The model was quite significant [ $F(1, 102)=15.212, p<.001$ ;  $B=.141$  ( $SE\ B=.036$ )]; Total PAQ Attachment accounted for 13% of the variability in Personal-Emotional Adjustment.

A multiple regression analysis evaluated coping styles as predictors of Personal-Emotional Adjustment (Table 17). Two significant findings emerged from this model: the model itself [ $F(9, 107)=3.723, p<.001$ ], and the predictor denial ( $p<.001$ ).

A final multiple regression analysis included both Total PAQ and denial as predictors of the dependent variable, Personal-Emotional Adjustment, to test the indirect effects of the associations (Table 18). The model was significant [ $F(2, 101)=16.095, p<.001$ ], and accounted for 24.2% of the variability in Personal-Emotional Adjustment. Denial maintained its significance; Total PAQ remained a significant predictor of Personal-Emotional Adjustment, but evidenced an increase in p value (.010) and a decreased B (.095). A Sobel test evaluated the

significance of the indirect effect. The results of this analysis supported a mediation (test statistic=2.778,  $p=.005$ ).

**Test of mediation: Total PAQ, coping styles, and attachment to institution.**

As in the previous 2 mediation models, 9 coping styles were deemed eligible for inclusion in this analysis, based upon results of regressions testing Total PAQ Attachment as a predictor of each coping style (see Table 2).

A multiple regression analysis was conducted to evaluate the significance of the association between Total PAQ and SACQ Attachment to the Institution. The model was significant [ $F(1, 97)=8.097, p=.005$ ;  $B=.098$  ( $SE\ B=.035$ )], accounting for 7.7% of the variability in Attachment to the Institution.

A regression analysis included active coping, denial, substance use, emotional support, instrumental support, behavioral disengagement, positive reframing, planning, and self-blame as predictors of Attachment to the Institution (Table 19). The model was significant [ $F(9, 102)=3.953, p<.001$ ], accounting for 25.9% of the variability in the DV. Only denial emerged as a significant predictor.

As shown in Table 20, a final multiple regression analysis included Total PAQ Attachment and denial as predictors of Attachment to the Institution, to test an indirect effect. The model exhibited significance [ $F(2, 96)=12.475, p<.001$ ], accounting for 20.6% of variability in the DV. Denial maintained its significance as a predictor, showing an inverse relationship with the outcome variable. Total PAQ evidenced a complete drop from significance ( $p=.145$ ) and a decrease in the unstandardized coefficient ( $B=.050$ ). A Sobel test evaluated the significance of the mediation model. Results of the Sobel test indicated that the mediation was significant (test statistic=2.813,  $p=.005$ ).

### Hypotheses 3 and 4

A series of multiple regressions tested the association between Total PAQ Attachment and its 3 dimensions (Affective Quality of Relationships, Parents as Facilitators of Independence, and Parents as Source of Support), and stress (as measured by the Perceived Stress Scale). The 4 attachment predictors (Total PAQ Attachment, Affective Attachment, Parents as Facilitators of Independence, and Parents as Source of Support) were each entered into 4 separate regressions, with the PSS used as a dependent variable in each. The results of these regressions are compiled in Table 21. With the exception of Parents as Facilitators of Independence, all attachment predictors were significantly associated with perceived stress. Both Total PAQ and each of its dimensions was negatively related to stress. Of the attachment indices, Total PAQ and PAQ Affective accounted for the most variability in stress; 15.2% and 15.6%, respectively.

A series of regressions evaluated the relationships between stress and college adjustment, using both the overall SACQ College Adjustment score and its 4 indices (Academic Adjustment, Social Adjustment, Personal-Emotional Adjustment, and Attachment to the Institution) as outcome variables, each in a separate model. The results of these analyses are presented in Table 22. PSS was a significant predictor of both overall college adjustment, and the 4 indices of the SACQ. In each case, a negative association was demonstrated. Perceived stress was a particularly strong predictor of Personal-Emotional Adjustment, accounting for 35.3% of the variability in the outcome variable.

#### **Test of moderation: Stress as a moderator in the attachment-denial-adjustment mediation model.**

To test the moderating effect of perceived stress on the relationship between Total PAQ and denial, Total PAQ and PSS scores were first mean centered for ease of interpretation. A

multiplicative composite was formed, using the product of Total PAQ and PSS. As shown in Table 23, Total PAQ, PSS, and the multiplicative composite of these variables were included in a regression model as predictors of denial to test the interaction. The model was significant [ $F(3, 100)=8.960, p<.001$ ], accounting for 21.2% of the variance in denial. A significant conditional effect was found for PSS: for those participants at the mean on attachment, a positive association existed between PSS and denial. With respect to the interaction between attachment and stress, a marginally significant result was found ( $p=.099$ ). As stress increased, the relationship between attachment security and use of denial became increasingly negative. Figure 1 illustrates the marginally significant interactive effect.

Significant mediation and moderation models are diagrammed in Figures 2-7. Numbers on the diagrams represent the standardized coefficients (B) from regressions.

### Discussion

The present study examined the relationship between parental attachment and college adjustment in first year college students. The mediating role of coping styles in the attachment-adjustment relationship was also tested. Additionally, stress was evaluated as a predictor of adjustment, and a potential moderator of the relationship between attachment and coping.

Results partially supported the proposed hypotheses. As predicted by Hypothesis 1, parental attachment was predictive of overall college adjustment, as well as of academic adjustment, emotional adjustment, and connection to the college institution. Attachment was also positively associated with social adjustment, though to a lesser extent. As expected, a strong relationship emerged between parental attachment and personal-emotional adjustment. The results replicated previous findings demonstrating that greater attachment security is associated

with more successful college adjustment (Marmarosh & Markin, 2007; Mattanah, Hancock, & Brand, 2004; Rice, Fitzgerald, Whaley, & Gibbs, 1995).

As an extension of Hypothesis 1, the three dimensions of parental attachment were also tested as predictors of overall college adjustment. The Affective and Parents as Source of Support dimensions of the PAQ were positively related to total college adjustment, whereas the Parents as Facilitators of Independence dimension was unrelated to adjustment.

One possible explanation for this finding comes from a construct closely related to the Parents as Facilitators of Independence dimension: separation-individuation from parents. Rice and colleagues examined separation-individuation in freshman students and found that perceived independence from parents was unrelated to adjustment (Rice, Cole, & Lapsley, 1990). Rather, having positive *feelings about separation* from parents emerged as the more important predictor of successful adjustment. The Facilitators of Independence scale focuses on the more functional aspects of developing autonomy (e.g., making decisions independently) rather than the emotional response to separation and autonomy. Perhaps the affective components of separation from parents are more important than independence when it comes to college adjustment (Beyers & Goossens, 2003).

Another factor to consider stems from the make up of the sample itself. The present sample was largely female (65%). Allen and Stoltenberg (1995) suggest that, relative to their male counterparts, female students may adjust better to college by maintaining close relationships with family, even as they become increasingly independent. Similarly, Lapsley, Rice, and Shadid (1989) found that college women exhibited more psychological connection to parents than did men, but that this gender difference had no impact on adjustment outcomes.

Taken together, these findings may explain why the Independence dimension was unrelated to adjustment in this sample.

Similarly, the literature suggests that young adults from non-European American cultural backgrounds highly value family interdependence and connectedness (Phinney, Kim-Jo, Osorio, & Vilhjalmsdottir, 2005; Phinney, Dennis, & Osorio, 2006). For example, Suizzo (2007) found that parents from non-European American cultures tend to emphasize values of familial connection and relatedness alongside autonomy when raising their children. The sample used in this study is ethnically diverse. Ethnic minority participants may have possessed strong interdependence values, which could have attenuated the relationship between PAQ Facilitators of Independence and adjustment.

The second hypothesis was also partially supported. Use of denial as a coping strategy mediated the relationships between attachment security and college adjustment. Denial also mediated the associations between attachment and three of the four indices of college adjustment: social adjustment, personal-emotional adjustment, and attachment to the university. In each case, denial was inversely related to both attachment security and adjustment. Though Hypothesis 2 was supported, in that a coping style (denial) did mediate the attachment-adjustment relationship, there was no evidence of other coping styles doing so.

The second half of the hypothesis proposed that coping strategies involving efforts to elicit social support or emotion-focused coping would emerge as mediators. Denial, arguably an emotion-focused strategy, did mediate the association, but otherwise this aspect of the hypothesis was not supported by the results. The findings appear to highlight denial as a uniquely unhealthy strategy for managing stress during the college transition. Links between use of denial and

maladjustment have been reported previously (Pritchard, Wilson, & Yamnitz, 2007; Aspinwall & Taylor, 1992; Giancola, Grawitch, & Borchert, 2009).

Denial failed to mediate the positive association between attachment security and academic adjustment. It is worth noting that the relationship was significant by conventional standards, but not the more stringent criterion used here. The emerging trend suggests that denial could be predictive of academic adjustment, but to a lesser extent than its relationship to other indices of college adjustment. Previous research has demonstrated a weak relationship between avoidance/detachment coping (e.g., denial) and academic achievement in college students (DeBerard, Spielmans, & Julka, 2004; Lawrence, Ashford, & Dent, 2006), while associations between denial and other adjustment domains are more robust (Giancola et al., 2009; Ohannessian et al., 2010).

Regarding the mediation findings, denial was also found to mediate the relationship between the Affective Quality of Relationships dimension of the PAQ and college adjustment, and to mediate the association between PAQ Parents as Source of Support and college adjustment (the latter to a marginally significant degree). These dimensions of the Parental Attachment Questionnaire tap the facets of attachment most directly related to affect and social connection. It appears that the use of denial as a coping mechanism plays an important role in explaining the relationship between these aspects of parental attachment and adjustment outcomes.

An examination of the literature and the underpinnings of attachment theory may help to explain why denial in particular emerged as a mediator of attachment-adjustment associations. Many theorists have argued that attachment is, in large part, a system of affect regulation

strategies (Bowlby, 1973; Alexander, Feeney, Hohaus, & Noller, 2001; Maunder & Hunter, 2012). Through early interactions with one's parent, a child develops expectations about what will happen when he is distressed, whether support or comfort is forthcoming from a caregiver, and eventually, his own ability to cope with the stressful event. When a caregiver's response to the distressed child is unreliable, erratic, hostile, or absent, a child must learn alternative methods of self-soothing and coping, which persist in adolescence and adulthood (Alexander, et al., 2001; Maunder & Hunter, 2012).

Routine use of these alternative coping methods, sometimes referred to as "secondary strategies," is characteristic of an insecure attachment style, wherein the individual has a tendency toward either chronic hyperactivation or deactivation of the attachment system (Lopez & Brennan, 2000). While hyperactivating strategies involve drawing attention to distress and focusing on negative emotion in a preoccupied fashion, deactivating tactics do the opposite: deny or minimize the experience or expression of distress (Maunder & Hunter, 2012; Lopez & Brennan, 2000). In particular, individuals with a dismissing attachment orientation [one theoretical category of insecure attachment (Bartholomew & Horowitz, 1991)] appear to use a number of denial-like strategies to cope with stress: minimize the impact of negative experiences with attachment figures, withdraw from others rather than seek out social support, suppress negative affect, avoid self-disclosure and emotional expression in relationships (Dykas & Cassidy, 2011; Lopez & Brennan, 2000; Maunder & Hunter, 2012).

Considering this theoretical backdrop, the findings from the present study suggest that insecure students who use deactivating strategies, namely denial, to manage stress are at the greatest risk for maladjustment in college. Previous research has found that students who were stably insecure across the first-year transition to college were more likely to use suppressive

coping strategies (e.g., "I avoid thinking about my problems") (Lopez & Gormley, 2002). In fact, these students actually increased their use of such avoidant coping tactics as time went on, which the authors predicted could lead to poor adjustment outcomes and attrition.

Indeed, denial and similar forms of suppressive/avoidant coping have been linked to poor psychological and physical adjustment in freshman students (Pritchard, Wilson, & Yamnitz, 2007; Aspinwall & Taylor, 1992), and decreased life satisfaction in adult college students (Giancola, et al., 2009).

A number of studies have reported specific outcomes of using denial to cope. Findings include associations between denial/other avoidant coping strategies and higher alcohol consumption in young adults (Ohannessian et al., 2010); increased internalizing and externalizing symptoms in children and adolescents, as well as decreased social competence (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001); and a reduced ability to elicit effective social support from others (Chow & Buhrmester, 2011). Pritchard et al. studied predictors of adjustment outcomes longitudinally across the first year of college (2007). Regular use of denial emerged as a significant predictor of increased health problems.

Further support for the relationship between attachment insecurity and denial coping comes from a physiological study by Diamond and colleagues (2006). Tests of sympathetic nervous system arousal (e.g., skin conductance level) were conducted in insecurely attached individuals. Tasks that elicited negative emotions and cognitions were presented to participants. For avoidant insecure individuals, physiological arousal was heightened and increased over time, even as they denied any sort of subjective distress. For anxiously attached participants, there was no corresponding increase in physiological reactivity throughout the experiment, though they did

endorse distress. The disconnect between the physical experience of distress and the subjective report of wellbeing was particularly evident in avoidantly attached female subjects.

Diamond et al. stressed the potentially detrimental health consequences of such chronically elevated physiological arousal. The findings suggest that insecurely attached individuals who make use of denial-like, suppressive strategies to manage distress are uniquely at risk for maladjustment. These results help us to understand the mediating role of denial in the present study: a way for insecurely attached and stress-intolerant students to block out distress, with detrimental consequences for emotional, psychological, and social adjustment.

The third hypothesis, which stated that higher levels of perceived stress would result in a stronger association between attachment and coping, was supported, though only in a marginally significant fashion. The interaction suggested that, at higher levels of reported stress, less secure students were more likely to use denial as a coping tactic, with a resulting decrease in positive adjustment. Conversely, at high levels of stress, more secure students were less likely to make use of denial to cope, and thus evidenced better adjustment outcomes. At lower levels of reported stress, the association between parental attachment security and use of denial was attenuated. It appears that the experience of stress does play some role in activating the attachment system, which then guides the selection of coping strategies (in this case, denial) (Mikulincer & Florian, 1998).

The final hypothesis proposed that higher levels of perceived stress would predict poorer adjustment. The results supported this prediction. Stress negatively predicted both overall college adjustment, as well as all four domains of adjustment evaluated in the present study (academic, social, personal-emotional, and attachment to the institution). A strong inverse relationship

emerged between perceived stress and personal-emotional adjustment, an index of physical and psychological wellbeing during the college transition. Results mirror previous findings demonstrating a relationship between stress and college adjustment (Daugherty & Lane, 1999, Skowron et al., 2004).

Though the primary focus of this study was to test the coping mediators of the attachment-adjustment relationship, it is still useful to examine the relationships between attachment and other types of coping that did not emerge as mediators. Total attachment security positively predicted self-distraction, active coping, emotional and instrumental support seeking, positive reframing, and planning. Other than denial, attachment was inversely related to substance use, behavioral disengagement, and self-blame (marginally). This pattern suggests that higher levels of attachment security are most predictive of proactive, social methods to cope. One possible exception is self-distraction, which could be viewed as a somewhat avoidant tactic. However, it could be argued that the self-distraction items (e.g., "I've been turning to work or other activities to take my mind off things") involve more of an orienting away from fixation on the stressor, rather than actively and chronically avoiding it. By contrast, lower security was largely associated with avoidant/suppressive coping styles: denial, substance use, behavioral disengagement. These findings suggest students with higher attachment security tend to use more active and prosocial coping strategies, while more insecure students tended to make use of suppressive, avoidant, and disengagement strategies. The results expand upon previous studies that have demonstrated relationships between attachment and suppressive coping (Wei, Heppner, Russell, & Young, 2006), and attachment and active, preventive coping techniques (McCarthy, Lambert, & Moller, 2006).

The results of this study have important implications for college student adjustment, and the prevention/intervention programs that might facilitate this important transition process. The investigation of both proximal and more distal variables predictive of adjustment outcomes can inform the development of interventions at multiple levels.

First, the results indicate that parental attachment security is predictive of college adjustment; the affective and supportive components of the parental attachment bond are particularly related to adjustment. Accordingly, a program could be developed that would foster the bond between students and their parents, with a particular emphasis on how to stay emotionally connected, and how to elicit and provide support, respectively.

For example, universities could encourage incoming students and their parents to participate in an online training course, providing new students with advice from more advanced students and counselors on staying connected with family and seeking support, while also coaching parents on how to best support their children emotionally and instrumentally during the transition process. While such a program would not alter a student's attachment orientation, it could perhaps help to compensate for parental attachment insecurity. While no existing examples of such a program were found in the literature, Credé and Niehorster (2011) suggest that a program that encourages increased contact and connection between students and their parents could facilitate adjustment.

Intervening at the level of coping is also a feasible and potentially beneficial strategy for improving college adjustment. For example, a college could hold a required workshop at orientation, as well as throughout the first year of college, educating students about different forms of coping, and the potentially detrimental consequences of denial and avoidance coping.

Brougham, Zail, Mendoza, and Miller (2009) suggest a possible format for stress management programs: an initial workshop during orientation, followed by multiple online “refresher” courses. Teaching alternative strategies to denial might allow students to cultivate a more diverse, effective coping repertoire.

Rirolli and Savicki (2010) note that possessing a diversity of coping strategies is associated with more successful psychological and physical adjustment to stress. Thus, helping students to discover and apply a broader range of coping skills might facilitate adjustment. Lopez and Brennan (2000) point out that insecurely attached adults in particular struggle to flexibly apply coping strategies; as such, this might be an especially important lesson for insecure students. Another important emphasis: learning to match coping strategies to the controllability of a stressor (Compas et al., 2001). Though denial was linked to maladjustment in the current study, Compas and colleagues suggest that denial, a passive coping strategy, could actually be appropriate in situations in which a stressor is beyond a student’s control. Perhaps a comprehensive coping program could also coach students on the appropriate contexts in which to utilize certain coping styles.

Because attachment insecurity is predictive of more avoidant coping strategies, especially use of denial, targeted prevention/intervention programs could be developed for this at-risk population. Goodall, Trejnowska, and Darling (2012) suggest that mindfulness-based interventions that enhance healthy emotional regulation can be especially useful for insecurely attached individuals. College counselors might consider administering brief attachment assessments during the intake process, and tailoring interventions and psychoeducation for more insecurely attached students.

One important consideration for intervention at the level of attachment insecurity: students who tend to use deactivating strategies to cope with stress, particularly denial, may be the least likely students to seek help or admit that they are struggling. Previous research suggests that insecurely attached individuals who use deactivating strategies are less likely to seek help (both from friends and family, and mental health professionals), less likely to acknowledge distress, and less likely to self-disclose or use therapy to their fullest advantage (Lopez & Brennan, 2000; Maunder & Hunter, 2012; Chow & Buhrmester, 2011). Kemp and Neimeyer (1999) caution that counselors may have to rely upon their clinical judgment to distinguish healthy students from those using denial, since both may report successful adjustment. More troublingly, the students who most need help may be the least likely to seek it out. One possible solution for this obstacle could be to train a network of peer counselors/educators to recognize students who tend to cope using denial and avoidance, and reach out to these students to provide support or encouragement to seek counseling.

### **Limitations of the Study**

There are a few important limitations to the present study. Most critically, this study is cross-sectional in nature, preventing inferences about the direction of causality in our variables. Without a clear direction of causality, alternative explanations for the data are certainly possible (e.g., difficulty with adjustment has a deleterious impact on relationships with parents and coping effectiveness, and increases stress). Obtaining longitudinal data related to these variables could be an important extension of the current findings, and allow for greater certainty regarding the direction of influence in the relevant constructs. Assessing these variables at multiple points during the first year of college could give us a better sense of the stability of the constructs across time and the transition process.

Another limitation is the use of the Brief COPE questionnaire as a measure of coping. This abbreviated form of the COPE (Carver et al., 1989) is comprised of two-item subscales. Though sufficient psychometrics have been demonstrated for the measure (Carver, 1997), such scale construction could affect reliability of the subscales, and thus impact the associations between coping styles and other variables. Future extensions of this study could use the full version of the COPE, or could conduct an exploratory factor analysis to reduce subscales to more parsimonious factors. Such an approach might allow researchers to detect relationships between variables with greater confidence in the reliability and validity of the measures, and thus, the results.

Additionally, this study used self-report measures to assess all variables. Though this was deemed the most appropriate method of data collection, given the parameters of this study, there are certainly a number of challenges associated with self-report assessment. It is possible that students were inaccurate in their recall and reporting, particularly with a measure like the Brief COPE, which asks students to recall their own coping tendencies.

Finally, a relatively small sample size was used in this study. Replications in a larger sample would lend credence to the present findings and enhance external validity.

### **Directions for Future Research**

As discussed, a number of prevention and intervention programs may be developed based upon these findings. Future studies could aim to develop and test the effectiveness of such programs. The findings could be of tremendous benefit for transitioning college students.

Given the aims of this study, a dimensional approach to studying attachment was selected. Future studies could explore the nature of the relationships between *categories* of

attachment, coping variables, and college adjustment, perhaps yielding additional insights. An examination of associations between the different attachment typologies and the other variables in this study could be enlightening, particularly given the pattern of findings related to use of denial in this study. The literature suggests that deactivating strategies for managing distress, like denial, might be especially relevant for certain attachment styles [e.g., dismissing; avoidant attachment (Maunder & Hunter, 2012)]. Hence, an investigation of this type of attachment classification could be useful for clarifying patterns of student behavior and emotional response.

An advantage of the current study was the inclusion of a diverse array of coping styles as mediators. Compas and colleagues (2001) note that many coping studies tend to combine various types of “disengagement” (avoidance) coping (e.g., denial, behavioral disengagement, social withdrawal). This study examined various forms of avoidant coping individually, clarifying the contributing role of each to student adjustment. This point raises another consideration: the standardization of measures across studies. There is such a tremendous variety in existing measures of both attachment and coping that comparisons across studies are often difficult, if not impossible. Authors have argued for standardization of both attachment (Lopez & Brennan, 2000) and coping (Compas et al., 2001) measures, in order to facilitate comparison and consolidation of findings. Hopefully, future research can strive for more uniformity in measures, or at least seek to create measures rooted in consistent or comparable theoretical bases.

Finally, this study examined relationships between attachment, coping, stress, and adjustment in a college population. Further research on these constructs among specific subsets of the student population could be very enlightening. For example, studies on how these variables present across ethnicities, commuter versus residential students, and in international students could contribute to the existing knowledge base and inform more targeted interventions.

In addition, attending college is only one of many possible paths in emerging adulthood.

Investigations of these variables in non-student emerging adults could point to both commonalities and important differences across these two populations.

In summary, this study replicated previous findings that parental attachment is predictive of college adjustment. In the present study, personal-emotional adjustment, academic adjustment, and attachment to the institution were predicted by parental attachment, while social adjustment was to only a marginally significant degree. Three dimensions of parental attachment security were also evaluated as predictors of college adjustment: the affective quality of the relationship with parents, parents as facilitators of independence, and parents as sources of support. Both the affective and supportive dimensions of the attachment bond were positively predictive of adjustment. This pattern of findings suggests that the emotional and supportive aspects of parental attachment are perhaps more directly relevant for successful college adjustment than the degree to which parents encourage autonomy and independence in their children. The results revealed that use of denial explains a significant portion of the attachment-adjustment relationship. Denial appears to be used more frequently by less securely attached students, with a resulting negative impact on adjustment outcomes. Furthermore, these relationships were more pronounced in students who reported higher levels of stress. Consistent with previous findings, higher stress was predictive of poorer adjustment during the college transition.

Taken together, these findings can inform the development of prevention and intervention programs to facilitate student adjustment during the first-year transition to college. Knowing that insecurely attached students and those who use denial to cope are prone to poorer adjustment outcomes, college administrators and counselors can develop stress management and psychoeducation programs accordingly, and identify these as potential focal issues in counseling

sessions. In an age when more emerging adults are attending college than ever, this knowledge could be quite useful in fostering student success and wellbeing, and avoiding attrition. In addition, this study contributes to the parental attachment literature by clarifying relationships between attachment, stress, and adjustment, and by highlighting denial as an important mediating influence in the association between attachment security and adjustment.

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Table 1

*Descriptive Statistics and Pearson Correlations for Age, Gender, Attachment, Coping, Adjustment, and Stress Variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. Age	-	-.14*	-.04	-.03	-.03	0.0	-.11	-.06	-.08	-.01	.06	-.02	-.01	-.09	-.04	.05	-.03	.04	-.10	.06	-.02	.14	.05	.11	-.03	-.06
2. Gender	-	.03	.05	0.0	.02	.15	.14*	.08	.06	-.02	.18**	.18**	.08	.07	.03	-.03	-.03	.06	.03	-.05	.09	.07	-.27**	.18*	.18**	
3. Total Adj.	-	.98**	.97**	.97**	.77**	.11	.10	-.04	-.06	.06	.14*	-.01	.05	.15**	.08	.08	.12*	.09	.19**	.12	.15	0.0	.05	-.01		
4. Acad. Adj.	-	.95**	.97**	.58**	.10	.10	-.03	-.06	.06	.14*	0.0	.08	.15*	.08	.07	.11	.08	.20**	.12	.16	-.03	.05	.01			
5. Soc. Adj.	-	.96**	.80**	.10	.10	-.03	-.04	.05	.14*	0.0	.07	.16**	.08	.10	.11	.08	.19**	.04	.06	.03	-.01	.03				
6. Pers.-Emot. Adj.	-	.50**	.06	.09	-.04	-.06	.04	.12*	-.01	.04	.15*	.07	.07	.12*	.08	.19**	.15	.20*	-.01	.04	-.03					
7. School Adj.	-	.30**	.17	-.37**	-.09	.19*	.22*	-.20*	-.06	.27**	.32**	-.02	.20*	.08	.01	.28**	.23*	.07	.29**	-.26**						
8. Self-Distract	-	.38**	.23**	.19**	.39**	.34**	.18**	.28**	.48**	.29**	.31**	.45**	.25**	.31**	.24**	.22*	-.07	.23**	.04							
9. Active Cope	-	.16**	.11	.37**	.44**	.07	.29**	.54**	.48**	.36**	.50**	.27**	.21**	.26**	.21*	-.17	.33**	-.07								
10. Denial	-	.41**	.28**	.22**	.50**	.40**	.30**	.14*	.31**	.25**	.14*	.38**	-.33**	.34**	-.15	.21*	.36**									
11. Subs. Use	-	.25**	.20**	.35**	.30**	.20**	.11	.31**	.27**	.17**	.36**	-.29**	.31**	.10	-.15	.17**										
12. Emot. Support	-	.74**	.27**	.48**	.52**	.34**	.27**	.44**	.33**	.34**	.29**	.16	-.03	.42**	.10											
13. Instrum. Support	-	.31**	.43**	.47**	.41**	.26**	.46**	.38**	.27**	.23*	.08	-.04	.44**	.07												
14. Behav. Diseng.	-	.40**	.20**	.13*	.29**	.27**	.18**	.42**	-.33**	.34**	-.08	-.22*	.35**													
15. Venting	-	.38**	.31**	.40**	.36**	.29**	.45**	.04	-.05	-.01	.20*	.23**														
16. Pos. Reframe	-	.50**	.55**	.64**	.38**	.33**	.29**	.22*	-.01	.36**	-.07															
17. Planning	-	.27**	.49**	.32**	.27**	.20*	.20*	-.13	.26**	0.0																
18. Humor	-	.45**	.24**	.33**	-.04	-.08	.09	-.02	-.04																	
19. Accept.	-	.38**	.36**	-.01	-.03	.03	.16	-.04																		
20. Religion	-	.16**	.10	.06	-.05	.16	.05																			
21. Self-blame	-	-.24**	-.23*	-.08	-.13	.33**																				
22. Attach. Tot.	-	.95**	.09	.82**	-.39**																					
23. Att. Affective	-	0.0	.66**	-.41**																						
24. Att. Independ.	-	-.20*	-.09																							
25. Att. Support	-	-.29**																								
26. Stress	-																									
<i>M</i>	18.4	--	16.4	17.9	17.3	16.6	41.8	2.6	3.1	1.8	1.2	2.5	2.8	1.7	2.2	3.0	3.1	2.4	3.0	2.2	2.5	180.3	97.0	40.1	41.4	19.6
<i>SD</i>	1.0	--	21.6	23.2	22.0	21.2	8.6	.9	.7	.9	.7	1.1	1.1	.8	.9	1.0	1.3	1.1	1.0	1.2	1.1	23.4	16.0	4.4	9.4	7.5

\*Significant at the .05 level

\*\*Significant at the .01 level

Note: Gender coded as male=0, female=1

**Table 2***Multiple Regression Analyses Predicting Coping Styles from Total PAQ Score*

<b>Dependent Variable</b>	<b>B</b>	<i>SE B</i>	<i>F</i>	<i>t</i>	<i>Sig.</i>	<i>r</i> <sup>2</sup>
Self-distraction	.007	.003	4.748	2.179	.032	.045
Active Coping	.007	.003	6.675	2.584	.011	.061
Denial	-.012	.003	12.867	-3.587	.001	.112
Substance Use	-.006	.002	7.202	-2.684	.008	.066
Emotional Support	.012	.004	10.370	3.220	.002	.092
Instrumental Support	.011	.004	8.574	2.928	.004	.078
Behavioral Disengagement	-.011	.003	10.760	-3.280	.001	.095
Venting	.001	.003	.067	.260	.796	.001
Positive Reframing	.010	.003	9.607	3.099	.003	.086
Planning	.007	.003	5.613	2.369	.020	.052
Humor	-.001	.004	.082	-.286	.776	.001
Acceptance	.001	.003	.076	.276	.783	.001
Religion	.005	.005	1.335	1.154	.251	.013
Self-blame	-.008	.004	3.875	-1.969	.052	.037

**Table 3**

*Multiple Regression Analysis Predicting Total SACQ Adjustment from Coping Styles*

Variable	B	SE B	t	Sig.	$r^2$
Self-distraction	3.509	1.461	2.402	.018	.043
Active Coping	.757	1.906	.397	.692	.001
Denial	-4.285	1.540	-2.783	.006	.057
Substance Use	-1.734	2.079	-.834	.406	.005
Emot. Support	.839	1.572	.534	.595	.002
Instrum. Support	.896	1.647	.544	.588	.002
Behav. Disengage	-.300	1.560	-.192	.848	<.001
Positive Reframing	.316	1.648	.192	.848	<.001
Planning	.538	2.046	.263	.793	.001
Self-blame	-.553	1.260	-.439	.661	.001

**Table 4***Multiple Regression Testing Mediation Effect of Denial on the Attachment-Adjustment Association*

Variable	B	SE B	t	Sig.	$r^2$
PAQ Total	.085	.051	1.652	.102	.023
Denial	-4.101	1.464	-2.801	.006	.067

**Table 5**

*Multiple Regression Analyses Predicting Coping Styles from PAQ Affective Quality of Relationships*

Dependent Variable	B	SE B	F	t	Sig.	$r^2$
Self-distraction	.010	.005	4.746	2.178	.032	.043
Active Coping	.008	.004	4.100	2.025	.045	.038
Denial	-.016	.005	12.023	-3.467	.001	.103
Substance Use	-.010	.003	10.655	-3.264	.001	.092
Emotional Support	.012	.006	4.691	2.166	.033	.043
Instrumental Support	.008	.005	2.173	1.474	.143	.020
Behavioral Disengagement	-.015	.005	10.206	-3.195	.002	.089
Venting	-.002	.005	.137	-.369	.713	.001
Positive Reframing	.011	.005	5.471	2.339	.021	.050
Planning	.010	.004	5.400	2.324	.022	.049
Humor	-.003	.006	.336	-.580	.563	.003
Acceptance	<.001	.004	.012	.110	.912	<.001
Religion	.004	.007	.431	.656	.513	.004
Self-blame	-.010	.006	3.134	-1.770	.080	.029

**Table 6***Multiple Regression Analysis Predicting Total SACQ Adjustment from Coping Styles*

<b>Variable</b>	<b>B</b>	<b>SE B</b>	<i>t</i>	<b>Sig.</b>	<i>r</i> <sup>2</sup>
Self-distraction	3.533	1.456	2.427	.017	.043
Active Coping	.969	1.860	.521	.604	.002
Denial	-4.420	1.514	-2.918	.004	.063
Substance Use	-1.719	2.072	-.829	.409	.005
Emot. Support	1.405	1.174	1.197	.234	.010
Behav. Disengage	-.123	1.521	-.081	.935	<.001
Positive Reframing	.316	1.642	.193	.848	<.001
Planning	.560	2.039	.275	.784	.001
Self-blame	-.682	1.233	-.553	.581	.002

**Table 7**

*Multiple Regression Analysis Testing Mediation Effect of Denial on the Affective Attachment-Adjustment Association*

Variable	B	SE B	t	Sig.	$r^2$
PAQ Affective	.114	.072	1.576	.118	.021
Denial	-4.315	1.439	-2.999	.003	.075

**Table 8***Multiple Regression Analyses Predicting Coping Styles from PAQ Parents as Facilitators of Independence*

Dependent Variable	B	SE B	F	t	Sig.	$r^2$
Self-distraction	-.008	.017	.230	-.479	.633	.002
Active Coping	-.034	.015	5.339	-2.311	.023	.047
Denial	-.040	.017	5.234	-2.288	.024	.046
Substance Use	.007	.012	.366	.605	.547	.003
Emotional Support	-.012	.021	.310	-.556	.579	.003
Instrumental Support	-.011	.021	.310	-.557	.579	.003
Behavioral Disengagement	-.021	.018	1.383	-1.176	.242	.013
Venting	-.011	.017	.384	-.620	.537	.004
Positive Reframing	-.002	.019	.011	-.103	.918	<.001
Planning	-.026	.016	2.735	-1.654	.101	.024
Humor	.021	.021	1.010	1.005	.317	.009
Acceptance	.013	.016	.694	.833	.407	.006
Religion	-.014	.025	.317	-.563	.574	.003
Self-blame	-.020	.020	1.008	-1.004	.318	.009

**Table 9**

*Multiple Regression Analysis Predicting Total SACQ Adjustment from Coping Styles*

Variable	B	SE B	t	Sig.	$r^2$
Active Coping	2.735	1.522	1.797	.075	.025
Denial	-4.722	1.313	-3.596	<.001	.099

Table 10

*Multiple Regression Analysis Testing Mediation Effect of Denial on the Independence Attachment-Adjustment Association*

Variable	B	SE B	t	Sig.	$r^2$
PAQ Independ.	-.133	.255	-.521	.603	.002
Denial	<b>-4.877</b>	1.367	<b>-3.566</b>	<b>.001</b>	<b>.106</b>

**Table 11***Multiple Regression Analyses Predicting Coping Styles from PAQ Parents as Sources of Support*

<b>Dependent Variable</b>	<b>B</b>	<b>SE B</b>	<b>F</b>	<b>t</b>	<b>Sig.</b>	<b>r<sup>2</sup></b>
Self-distraction	.016	.008	3.972	1.993	.049	.033
Active Coping	.026	.007	16.162	4.020	<.001	.124
Denial	-.016	.008	4.149	-2.037	.044	.035
Substance Use	-.007	.005	1.757	-1.325	.188	.015
Emotional Support	.049	.009	31.762	5.636	<.001	.218
Instrumental Support	.051	.008	38.407	6.197	<.001	.252
Behavioral Disengagement	-.018	.008	5.042	-2.246	.027	.042
Venting	.018	.008	5.171	2.274	.025	.043
Positive Reframing	.037	.008	21.129	4.597	<.001	.156
Planning	.025	.007	13.116	3.662	<.001	.103
Humor	-.003	.010	.088	-.296	.768	.001
Acceptance	.014	.007	3.755	1.938	.055	.032
Religion	.023	.011	4.308	2.075	.040	.036
Self-blame	-.005	.009	.256	-.506	.614	.002

**Table 12***Multiple Regression Analysis Predicting Total SACQ Adjustment from Coping Styles*

<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>t</b>	<b>Sig.</b>	<b>r<sup>2</sup></b>
Self-distraction	3.409	1.443	2.362	.020	.040
Active Coping	.649	1.907	.340	.734	.001
Denial	-4.527	1.525	-2.968	.004	.064
Emotional Support	1.583	1.626	.973	.333	.007
Instrumental Supp.	.678	1.640	.414	.680	.001
Behav. Diseng.	.023	1.564	.015	.988	<.001
Venting	-2.597	1.482	-1.752	.083	.022
Positive Reframing	-.536	1.648	-.325	.746	.001
Planning	.963	1.987	.485	.629	.002
Acceptance	1.421	1.563	.903	.368	.006
Religion	.383	.960	.399	.690	.001

**Table 13***Multiple Regression Analysis Testing Mediation Effect of Denial on the Support Attachment-Adjustment Association*

Variable	B	SE B	t	Sig.	$r^2$
PAQ Support	.268	.115	2.324	.022	.041
Denial	-4.358	1.324	-3.291	.001	.082

**Table 14***Multiple Regression Analysis Predicting Academic Adjustment from Coping Styles*

<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>t</b>	<b>Sig.</b>	<b><math>r^2</math></b>
Active Coping	2.243	1.857	1.208	.230	.011
Denial	-3.483	1.504	-2.316	.022	.041
Substance Use	-3.359	2.032	-1.654	.101	.021
Emotional Support	.747	1.536	.486	.628	.002
Instrumental Supp.	1.267	1.609	.788	.433	.005
Behav. Diseng.	-.327	1.520	-.215	.830	<.001
Pos. Reframing	.428	1.563	.274	.785	.001
Planning	.500	1.999	.250	.803	<.001
Self-blame	.755	1.198	.630	.530	.003

**Table 15***Multiple Regression Analysis Predicting Social Adjustment from Coping Styles*

<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>t</b>	<b>Sig.</b>	<b><i>r</i><sup>2</sup></b>
Active Coping	.153	1.280	.120	.905	<.001
Denial	-3.536	1.037	-3.410	.001	.080
Substance Use	.610	1.401	.435	.664	.001
Emotional Support	-.581	1.059	-.549	.584	.002
Instrumental Supp.	1.622	1.109	1.462	.147	.015
Behav. Diseng.	-.079	1.048	-.075	.940	<.001
Pos. Reframing	1.869	1.078	1.734	.086	.020
Planning	1.525	1.378	1.106	.271	.008
Self-blame	-.640	.826	-.775	.440	.004

**Table 16**

*Multiple Regression Analysis Testing Mediation Effect of Denial on the Total PAQ Attachment-Social Adjustment Association*

Variable	B	SE B	t	Sig.	$r^2$
PAQ Total	.019	.033	.578	.565	.003
Denial	-3.795	.952	-3.988	<.001	.132

**Table 17***Multiple Regression Analysis Predicting Personal-Emotional Adjustment from Coping Styles*

Variable	B	SE B	t	Sig.	$r^2$
Active Coping	1.629	1.461	1.115	.267	.009
Denial	-4.342	1.184	-3.668	<.001	.095
Substance Use	-2.667	1.599	-1.668	.098	.020
Emotional Support	.481	1.209	.398	.692	.001
Instrumental Supp.	-.150	1.266	-.118	.906	<.001
Behav. Diseng.	-.287	1.196	-.240	.811	<.001
Pos. Reframing	1.447	1.230	1.176	.242	.010
Planning	-.169	1.573	-.108	.914	<.001
Self-blame	.180	.943	.191	.849	<.001

**Table 18**

*Multiple Regression Analysis Testing Mediation Effect of Denial on the Total PAQ Attachment-Personal-Emotional Adjustment Association*

Variable	B	SE B	t	Sig.	$r^2$
PAQ Total	.095	.036	2.626	.010	.052
Denial	-3.979	1.031	-3.861	<.001	.112

**Table 19***Multiple Regression Analysis Predicting Attachment to the Institution from Coping Styles*

<b>Variable</b>	<b>B</b>	<b>SE B</b>	<b>t</b>	<b>Sig.</b>	<b><math>r^2</math></b>
Active Coping	-.138	1.336	-.103	.918	<.001
Denial	-3.992	1.065	-3.747	<.001	.102
Substance Use	-.484	1.414	-.342	.733	.001
Emotional Support	.177	1.076	.165	.870	<.001
Instrumental Supp.	.679	1.134	.599	.551	.003
Behav. Diseng.	.297	1.082	.274	.784	.001
Pos. Reframing	2.124	1.167	1.821	.072	.024
Planning	1.295	1.434	.903	.369	.006
Self-blame	.412	.852	.484	.630	.002

**Table 20**

*Multiple Regression Analysis Testing Mediation Effect of Denial on the Total PAQ-Attachment to Institution Association*

Variable	B	SE B	t	Sig.	$r^2$
Att. Institution	.050	.034	1.469	.145	.018
Denial	-3.821	.966	-3.954	<.001	.129

**Table 21**

*Multiple Regression Analyses Predicting Perceived Stress from Total PAQ Attachment, Affective Attachment, Parents as Facilitators of Independence, and Parents as Source of Support*

Variable	B	SE B	t	Sig.	$r^2$
PAQ Total	-.124	.029	-4.275	<.001	.152
Affective Attach.	-.182	.041	-4.408	<.001	.156
Independ. Attach.	-.241	.160	-1.508	.134	.020
Support Attach.	-.222	.075	-2.979	.004	.072

**Table 22**

*Multiple Regression Analyses Predicting Total SACQ Adjustment, Academic Adjustment, Social Adjustment, Personal-Emotional Adjustment, and Attachment to the Institution from the Perceived Stress Scale*

Dependent Variable	B	SE B	F	t	Sig.	$r^2$
Total SACQ	-.568	.137	17.125	-4.138	<.001	.130
Acad. Adjustment	-.495	.133	13.774	-3.711	<.001	.107
Social Adjustment	-.368	.098	14.201	-3.768	<.001	.110
P-E Adjustment	-.735	.093	62.831	-7.927	<.001	.353
Att. to Institution	-.298	.102	8.513	-2.918	.004	.072

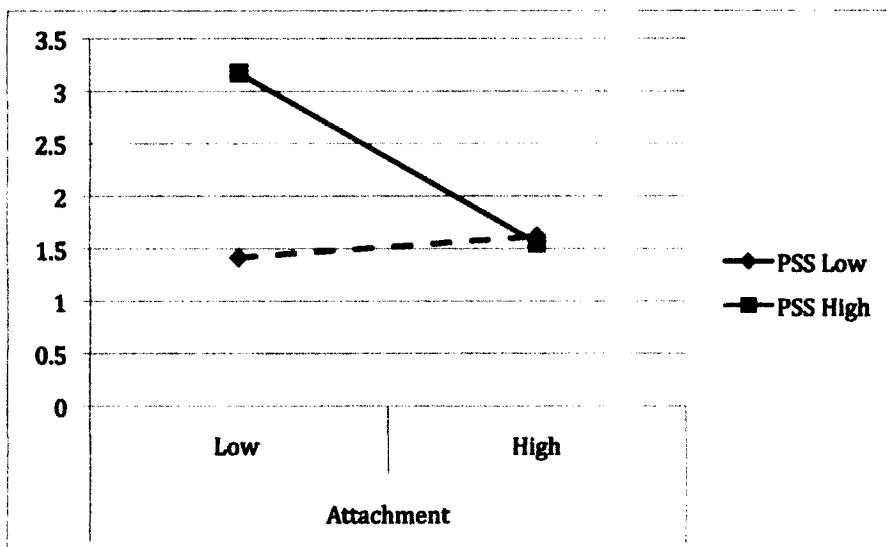
**Table 23**

*Multiple Regression Analysis Testing the Interactive Effects of Total PAQ Attachment and PSS on Denial*

Variable	B	SE B	t	Sig.	$r^2$
PAQ Total	-.006	.004	-1.564	.121	.019
PSS	.036	.011	3.378	.001	.090
PAQxPSS	-.001	<.001	-1.665	.099	.022

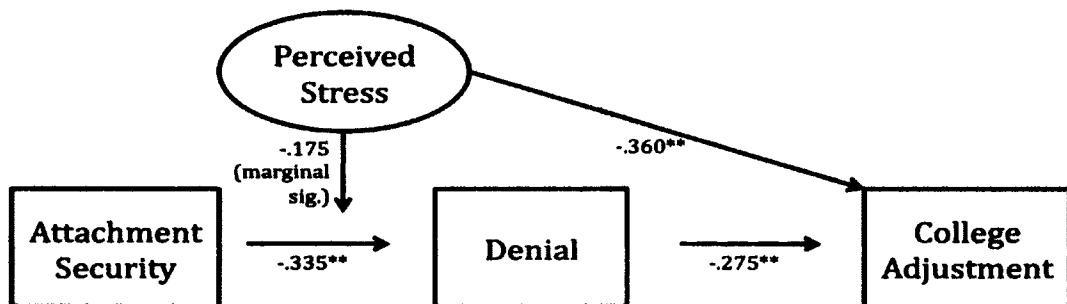
**Figure 1**

*Graph Modeling the Interactive Effect of Total PAQ Attachment Security and Perceived Stress on Use of Denial as a Coping Style*



**Figure 2**

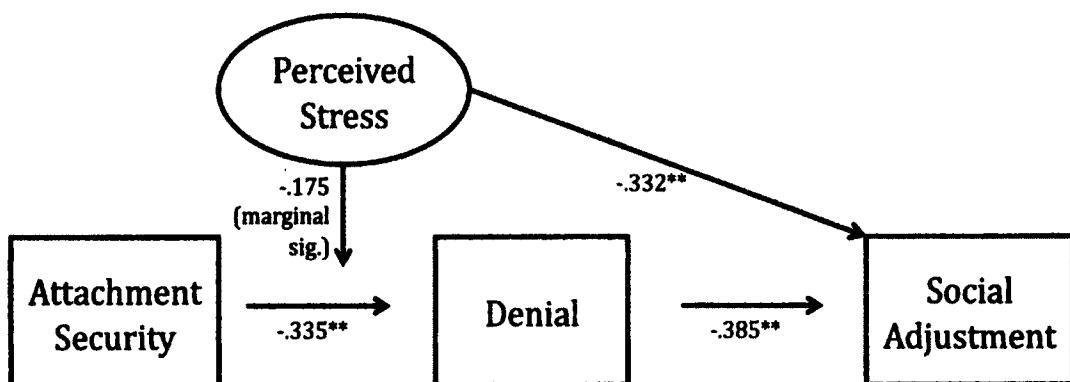
*Diagram Depicting Mediation/Moderation Effects of Attachment Security, Perceived Stress, Denial, and College Adjustment*



\*\*denotes significance ( $p < .05$ )

**Figure 3**

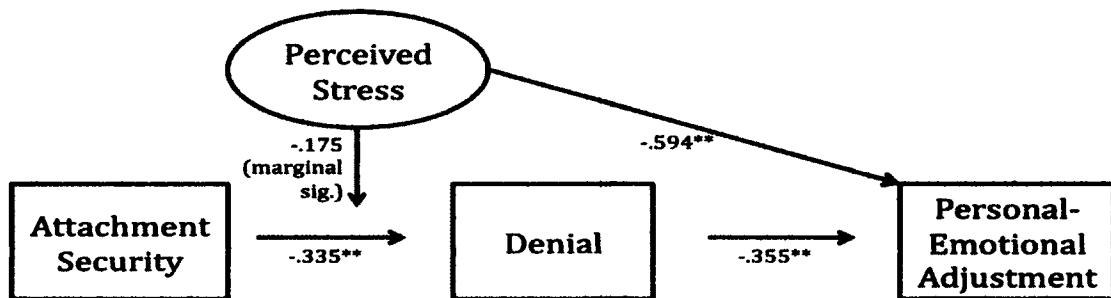
*Diagram Depicting Mediation/Moderation Effects of Attachment Security, Perceived Stress, Denial, and Social Adjustment*



\*\*denotes significance ( $p < .05$ )

**Figure 4**

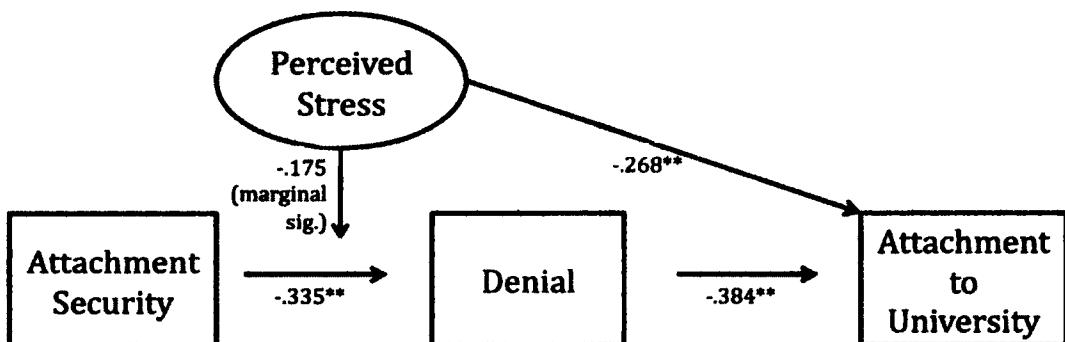
*Diagram Depicting Mediation/Moderation Effects of Attachment Security, Perceived Stress, Denial, and Personal-Emotional Adjustment*



\*\*denotes significance ( $p < .05$ )

**Figure 5**

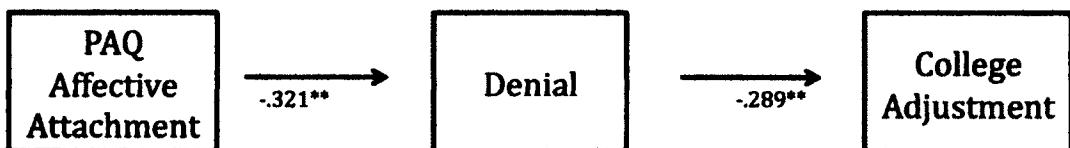
*Diagram Depicting Mediation/Moderation Effects of Attachment Security, Perceived Stress, Denial, and Attachment to the University*



\*\*denotes significance ( $p < .05$ )

**Figure 6**

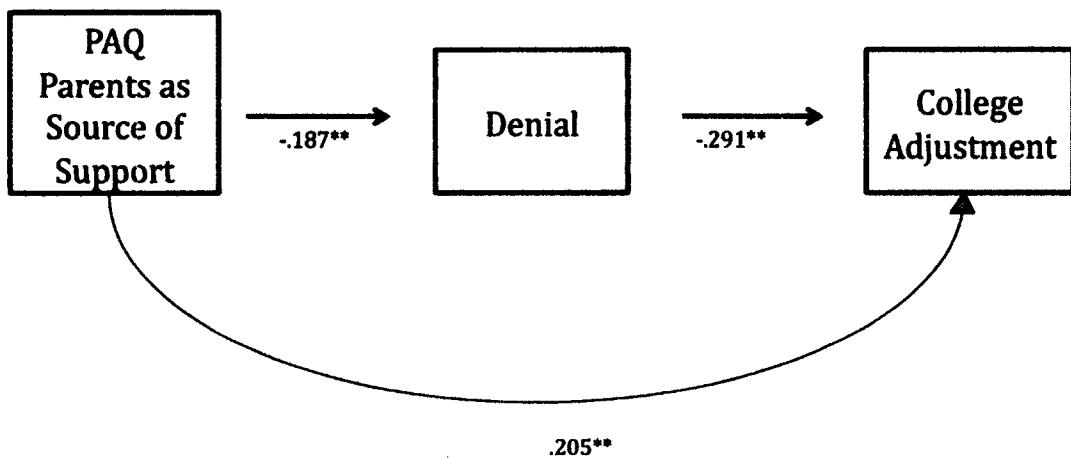
*Diagram Depicting Mediation Relationship between Attachment Security, Denial, and College Adjustment*



\*\*denotes significance ( $p < .05$ )

**Figure 7**

*Diagram Depicting Mediation Relationship between Parents as Source of Support, Denial, and College Adjustment*



\*\*denotes significance ( $p < .05$ )

Note: Partial mediation only marginally significant, based on results of Sobel test.