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Change in Parental and Peer Relationship Quality During Emerging Adulthood:
Implications for Academic, Social, and Emotional Functioning

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*denotes equal contribution

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Abstract

We report on two longitudinal studies, where we examined how stability and change in attachment to parents and peers from the first to last year of college were associated with changes in theoretically-relevant outcomes. As expected, students with consistently secure parental and peer attachment evidenced the best academic, social, and emotional functioning overall. Participants with “stable secure” *parental* attachment reported significant increases in their academic and emotional functioning and their social competencies; on the other hand, students with consistently low parental attachment showed a decline in their emotional functioning. Participants with stable secure *peer* attachment also reported lower overall levels of depression and loneliness, better social competence, and more favorable attitudes about help-seeking. Finally, students who transitioned from lower to higher parental attachment showed significant declines in loneliness; those transitioning from low to high peer attachment evidenced a significant increase in social functioning. We discuss implications for how college-based programming might serve to forestall declines in parental/peer attachment and/or facilitate skill-building among students who identify with a more insecure style at college entry.

Keywords: parent attachment; peer attachment; longitudinal; college students; social competence; help-seeking; academic adjustment; emotional adjustment; social adjustment

Change in Parental and Peer Relationship Quality during Emerging Adulthood:
Implications for Academic, Social, and Emotional Functioning

Since Jeffrey Arnett's groundbreaking article in the *American Psychologist* (Arnett, 2000), developmental psychologists have increasingly conceptualized the 18 to 25 year-old age-range as a distinct developmental period. Called emerging adults (EAs), individuals in this time period seek greater independence and autonomy from their parents while investing themselves heavily in the development of a career and personal identity and advancing their romantic relationship skills (Arnett, 2015; Mattanah, 2016a). At the same time, emerging adulthood is a period of instability and feeling "in-between" adolescence and full adulthood, where individuals often struggle with risk-taking behaviors in order to manage the stresses of identity formation (Arnett, 2015).

Perhaps because of these stressors, and despite seeking greater autonomy, EAs continue to value a close and supportive relationship with their parents, even when EAs choose to live away from home to attend college (Alsopp, 2008; Guassi Moreira & Telzer, 2015; Tsai, 2013). For example, in a recent large-scale survey, a majority (65%) of parents of EAs ages 18-21 reported that they are in contact with their child "every day or almost every day". For many parents (66%), this level of contact was "about right"; only 10% wished for *less* contact (Arnett & Schwabb, 2013). Parent-child relationships during EA also tended to be regarded more positively than parent-child relationships in adolescence. Indeed, 75% of EAs and 66% of parents of EAs agreed that their relationship has improved since adolescence (Arnett & Schwabb, 2012, 2013). These data suggest that for most EAs, the parent-child relationship is relatively involved, but that this is a desirable and evolved form of the relationship.

During the college years specifically, longitudinal studies suggest that the quality of the

parent-child relationship is relatively stable (Kenny, 1990; Rice, Fitzgerald, Whaley, & Gibbs, 1995; Sun, Bell, Feng, & Avery, 2000) or improves (Levitt, Silver, & Santos, 2007). Given that stability or improvement in attachment security is normative during this time, it may be instructive to examine those who experience *change* in their emotional connection to parents, especially a decline, and the psychosocial correlates of that change (Lopez & Gormley, 2002; Sun et al., 2000). Accordingly, in the current study, we examined how change in parental attachment during the college years was associated with change in several areas, namely academic, social, and emotional functioning, help-seeking, depressive symptoms, and loneliness. We focused on these outcomes because of their theoretical associations with attachment theory and because they capture a broad range of student functioning.

In addition to parents, peers are another critical source of influence and support for EAs (Furman & Buhrmester, 1992) and the quality of one's friendships has been linked to a host of outcomes, both academic and psychological (see Pittman & Richmond, 2008 for a review). Similar to the findings for parental attachment, attachment to peers has been shown to be relatively stable over the college years (Lapsley, Rice, & Fitzgerald, 1990). One key limitation of the research on peer attachment, however, is the lack of longitudinal investigations examining change in peer relationships (Guassi Moreira & Telzer, 2015). As such, the current study sought to fill this gap not only by documenting changes in peer attachment during the college years, but also by correlating that change with changes in the aforementioned psychosocial indicators. Importantly, this research may promote a better understanding of the ramifications of increased alienation from parents and/or peers during this developmental stage and inform both prevention and intervention efforts with these students. In addition, in the current study we provide data from studies on two distinct college campuses, so as to explore the consistency with which

changes in attachment are associated with an improvement or decline in functioning.

Background

Attachment theory is concerned with “the importance of significant emotional bonds for healthy development and adjustment” (Rice et al., 1995, p. 463). Although initially developed to describe the significance of the connection between primary caregivers and infants, research on attachment security and its correlates has extended to studies of adolescents and adults, on account of the fact that one’s “working models,” or mental representations of caregivers, are assumed to have a longstanding influence on how people feel about and engage in close relationships (Collins, Guichard, Ford, & Feeney, 2004; Rholes & Simpson, 2004). Attachment theory is a useful lens through which to understand why some emerging adults navigate the college years more or less adaptively. The college years often are marked by a formal separation from parents, the establishment of new friendships, involvement in more serious and long-term romantic relationships, and the assumption of responsibility for one’s academics and career planning. We would expect that EAs with a more *secure* attachment style, characterized by an ability to seek out satisfying relationships with people who are consistently attuned to their needs, to navigate these transitions especially well (Collins et al., 2004).

Higher levels of parental and peer attachment better prepare students to engage socially and academically, and may protect them against distress. Specifically, greater attachment security was associated with social competence, which refers to one’s ability to establish and nurture close and enduring relationships (Corcoran & Mallinckrodt, 2000). Students whose caregivers have been more trustworthy and communicative may be more likely to develop these attributes themselves and enact them in their current relationships, thereby leading them to experience more satisfying social relationships and less loneliness (Kerns & Stevens, 1996), as

was demonstrated empirically by Wei, Russell, and Zakilik (2005). Relatedly, students with a secure style would be expected to have more rewarding academic experiences; not only are they more willing to challenge themselves on account of greater self-confidence, but they also are more likely to seek academic help given previous constructive experiences securing help from a parent (Newman, 2000). Indeed, two short-term longitudinal studies (Holt 2014a, 2014b) provided support for the association between attachment security and academic help-seeking in first-year college students. Finally, students with a more insecure attachment style may be at greater risk for depressive symptoms and loneliness because they attribute relationship challenges as a confirmation of their inability to forge close relationships and/or expect rejection on account of having a negative working model of self and thus elicit rejection from others (Bowlby, 1980). They also are more likely to have experienced parental loss, thereby internalizing a lack of agency and helplessness (Bowlby, 1980). Indeed, numerous studies, employing a variety of attachment measures, have demonstrated a link between parental attachment, depressive symptoms, and loneliness (Mattanah, Lopez, & Govern, 2011).

Although working models are thought to be relatively stable during childhood and adolescence, they are subject to change (Rholes & Simpson, 2004). Students who are securely attached to parents and/or peers at the beginning of college may migrate to a more insecure style on account of life events, such as the dissolution of a romantic relationship (Davila & Cobb, 2004) or a close friendship from high school. Several studies have documented the continuity and discontinuity in attachment security and its correlates, although much of the research has been limited to brief time frames and a restricted number of outcomes. One of the earliest studies conducted by Kenny (1990) examined the trajectories of 29 college students from their first to last year of college. She found that there was no significant change in parental attachment during

this time, although across both time points, females reported higher levels of emotional support from parents compared to males. Rice et al. (1995) followed a sample of students ($N=81$) between the first and third years of college and, similar to Kenny (1990), found that parental attachment was stable during this time frame. Peer attachment, on the other hand, improved during this period, with participants reporting less peer alienation in their junior year. Because of Rice et al.'s relatively small sample size, they did not examine differential change in their outcomes by attachment change group. However, they did examine the extent to which parental attachment in the first year predicted junior year functioning and found that students classified as highly secure in the first year reported significantly better academic and emotional adjustment. These findings suggested that high attachment security to parent is a prospective predictor of better functioning during college; although, because peer attachment was not examined in the same way, it is unknown whether it would evidence the same pattern.

More recent studies have compared students who have consistently secure or insecure styles, versus those who experience change in attachment representation during the college years. Sun et al. (2000) compared students who maintained a high level of closeness to parents between the first and last year of college with those who migrated from a higher to lower level of closeness. Males who migrated to a more insecure style reported less satisfaction/importance of relationships with the opposite gender and higher levels of shyness compared to males who sustained a higher level of attachment security. In contrast, females who migrated from a more to less secure attachment style reported significantly lower closeness to mothers, parental influence, instrumentality, and social competence. This study was limited by the fact that it employed a three- and six-item measure of parental support in the first and last years, respectively. Nonetheless, these findings suggest that changes in parental relationship quality are related to

EAs' functioning and these changes may be associated with more pronounced effects on females' relational competencies.

Lopez and Gormley (2002) examined change in attachment style over a shorter time frame (i.e., first year of college), focusing on its associations with relational competencies and markers of individual maladjustment. Their data suggested a moderate amount of stability in attachment security: nearly one-third of their participants (31%) endorsed a secure style at both time points, whereas about 26% were consistently insecure. Similar percentages of students migrated from a secure to insecure style (17%) as from an insecure to a secure style (16%). The authors found that, compared to the other groups, stable secure participants reported lower levels of depression, maladaptive coping, personal problems, self-splitting (i.e., stability of one's self-image), in addition to greater confidence in one's romantic relationships, physical appearance, and better social skills. Further, those who changed from an insecure to a secure style endorsed less reactive coping, fewer symptoms of depression, fewer personal problems, and less self-splitting over time, which suggested that change in attachment is possible and is associated with more favorable psychological functioning (Lopez & Gormley, 2002).

In the most recent study, Guassi Moreira and Telzer (2015) examined parental attachment (which they referred to as *family cohesion*) in a larger group of undergraduates during the two-months following the college transition. They found that family cohesion increased during this time; further, increases in family cohesion scores were associated with decreases in depressive symptoms; however, this effect only was apparent for females, which is similar to the findings of Sun et al. (2000), who showed that change in attachment had a more pervasive effect on females' social functioning. The authors also found that positive change in optimism and self-esteem mediated the effects of family cohesion on depressive symptoms. These findings not only mirror

earlier studies, which showed that a decline in parental attachment during the college years may place EAs at risk for poorer intra- and interpersonal functioning, but they also provided a window into more intermediate factors that might account for these poorer outcomes.

The Current Study

In the current study, we sought to replicate Rice et al.'s (1995) cross-sectional and longitudinal findings, which showed that students who were higher in their attachment security with their parents evidence the most stability or positive change in their academic, social, and emotional functioning during the college years. Further, in line with the findings of Sun et al. (2000), who showed that declines in parental closeness were associated with more relational difficulties, we hypothesized that students who changed from a more secure to less secure parental attachment relationship would evidence poorer functioning on our study measures compared to the stable secure group. Next, we hypothesized that students who reported improved relationships with parents would demonstrate gains in social and emotional competence over the college years, consistent with Lopez and Gormley (2002), who showed improved outcomes for students moving from an insecure to secure attachment representation over the first year of college.

We extended previous work by examining change in peer attachment, as well as parent attachment. Because very little research has examined the psychosocial correlates of changing peer attachment relationships over the course of college, we had few specific hypotheses concerning peer attachment. However, we expected that students with stably secure peer attachment relationship or those moving from insecure to more secure peer attachment over the course of college would demonstrate improvements in social adjustment, in particular.

Method

Study 1

Participants and Procedure

Participants included 156 college students in the fourth year of their studies [$M_{\text{age}} = 21.27$ years ($SD = 0.54$), 64% female]. A link to a confidential web-based survey was distributed via e-mail towards the end of the fall semester (Time 2) to all college seniors who participated in a prior study during the first week of their first year of college (Time 1). Because the measure of student functioning (i.e., Student Adaptation to College Questionnaire) requires participants to have had some college experience, the SACQ was administered at the end of participants' first semester of the first year. For the Time 1 surveys, participants were entered into drawings for electronic devices and online merchant gift certificates. For Time 2, all participants were compensated with \$10 gift cards to an on-campus eatery. Non-responders were provided with another opportunity to complete the Time 2 survey at the beginning of their last semester; however, most participants (90%) completed the Time 2 survey during the fall semester.

Although 273 web-based survey invitations were distributed during participants' fourth year, 51 participants were not viable because they had either withdrawn or transferred from the college. The remaining 66 students did not access and/or complete the survey. Accordingly, the final sample of 156 students represented 70% of eligible participants. Respondents who participated in their fourth year did not differ from non-responders on any of the study variables at Time 1. Participants reported their race/ethnicity as: 73% Caucasian, 11% Asian or Asian American, 7% Hispanic or Latino, 5% "Other", and 4% Black or African American. A large percentage indicated that their father (80%) and/or mother (79%) had a college or graduate degree. Analyses including the SACQ included a slightly smaller sample size ($n=126$), on account of the fact that some students responded to the survey during their first week of college

and during their fourth year, but not at the end of their first semester, when the full SACQ was administered for the first time.

Measures

Adjustment to college. The Student Adjustment to College Questionnaire (SACQ; Baker & Siryk, 1989) was used to assess students' academic, social, and personal/emotional adjustment. Participants responded to all items on a 9-point scale ranging from (1 = *applies very closely to me*) to (9 = *doesn't apply to me at all*). Negatively worded items were reverse-scored so that higher scores denoted better adjustment in the areas described below. Three separate scores were created by averaging the items for each subscale (see below).

Academic adjustment. The academic adjustment scale comprised 24 items ($\alpha_{T1} = .86$; $\alpha_{T2} = .87$) and inquired about students' ability to effectively prepare for, and engage in their courses; the clarity of students' academic goals; and students' satisfaction with their overall academic experience in college.

Social adjustment. The social adjustment subscale comprised 20 items and assessed students' feelings of fitting in, participating in social activities, and making friends in college. The internal consistency reliability of the measure was excellent ($\alpha_{T1} = .90$; $\alpha_{T2} = .89$).

Personal and emotional adjustment. The personal/emotional adjustment subscale comprised 15 items ($\alpha_{T1} = .85$; $\alpha_{T2} = .86$) and assessed the extent to which students were experiencing stress and depressive symptoms, somatic symptoms, and disruptions in behaviors such as sleep and appetite.

In terms of validity of the SACQ as a measure of college adjustment, a recent meta-analysis found that the academic adjustment subscale of the SACQ correlated significantly with objective GPA scores, as collected from university records, and predicted retention and

graduation rates. The emotional adjustment subscale significantly predicted likelihood of being counseled in college, whereas the social adjustment subscale was substantially correlated with students' reports of feeling adequately socially supported in college (Credé & Niehorster, 2012).

Social competence. Social competence, which refers to one's ability to communicate and interact effectively with others, was measured using the Texas Social Behavior Inventory Form A (TSBI; Helmreich & Stapp, 1974). Participants' responses to 16 items ($\alpha=.85$ at both time points) were recorded on a 5-point scale from 1 = *not at all characteristic of me* to 5 = *very characteristic of me*. Examples of these items include, "I am not likely to speak to people until they speak to me", and "I would describe myself as self-confident". Seven items were reverse scored so that higher mean scores on the TSBI denoted better social competence.

Academic help-seeking. We used 8 items from Karabenick's (2003) 13-item academic help-seeking scale ($\alpha_{T1}=.87$; $\alpha_{T2}=.85$) to assess participants' willingness to seek help if they encountered difficulties with their academics. Six items were reverse-scored so that the overall mean score denoted a greater inclination to seek academic help. At Time 1, the items were worded to reflect participants' attitudes, since participants did not have any college experience. A sample item is, "Getting help would be one of the first things I would do if I were having trouble in one of my courses." In contrast, at Time 2, the questions inquired about participants' actual help-seeking behavior in college (e.g., "Getting help is one of the first things I do if I am having trouble in one of my courses"). A 5-point response scale was used, with higher mean scores denoting a greater willingness to seek academic help.

Parent and peer attachment. An abbreviated form of the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) was used to measure participants' beliefs about their attachment figures. The IPPA includes three subscales to measure attachment

security: Trust, Communication, and Alienation. The questionnaire used in the current survey included the four highest loading items, according to Armsden and Greenberg (1987), for each of these three subscales, for a total of 24 items. Other researchers, such as Laible, Carlo, and Raffaelli (2000) and Laible, Carlo, and Roesch (2004), utilized a similar approach to shorten the IPPA and have found the briefer version to be both valid and reliable. The first 12 questions asked about the students' caregiver who has influenced them most; participants indicated their primary caregiver as follows: 78% indicated their mother, 17% father, 1% grandmother, and 4% described "Other". The items addressed one's feelings of trust in the caregiver to understand and respect his/her needs (e.g. "my parent respects my feelings"; "when I am angry about something, my parent tries to be understanding"), confidence that his/her caregiver is sensitive and responsive (e.g. "my parent can tell when I'm upset about something"), and resentment towards or emotional detachment from the caregiver (e.g. "I feel angry with my mother"). Consistent with the recommendations from the scale's developers, we created a composite "secure" parental attachment score by averaging the trust, communication, and alienation (reverse-scored) subscales.

There were 12 corresponding peer attachment items, meaning that the content of the items was similar, but peers, rather than parents, were the target. Examples of peer attachment items include, "I trust my friends", "my friends respect my feelings", and "I get upset a lot more often than my friends know about". Participants were asked to indicate how true each statement was for them currently on a 5-point scale ranging from 1=*almost never or never* to 5=*almost always or always*. We reverse scored the alienation items so that higher scores denoted better attachment to peers, then created a composite score by averaging all of the items. The internal consistency reliabilities were high for both the parent ($\alpha_{T1} = .91$; $\alpha_{T2} = .90$) and peer ($\alpha_{T1} = .87$;

$\alpha_{T2}=.89$) measures.

Data Analysis Plan

In order to examine the effects of stable or changing attachment security on our outcome variables, we categorized participants into attachment change groups (i.e., stable insecure, stable secure, decliners, increasers) based on their Time 1 and Time 2 parent and peer attachment scores, respectively. We created four groups for parent *and* peer attachment separately in order to determine whether changes in these two constructs were related to the outcome measures differentially. Similar to Laible et al. (2000), we first performed a mean split of the parental and peer attachment scores to determine lower versus higher scorers on these variables at Times 1 and 2, respectively. Then, we made group classifications based on participants' pattern of scores from Times 1 and 2. Specifically, we classified participants as "stable secure" (42%) if their IPPA score for parental attachment was above the mean at both Time 1 and Time 2; "stable insecure" (29%) meant participants were below the mean at both time points; "increasers" (15%) transitioned from below the mean at Time 1 to above the mean at Time 2; "decreasers" (14%) transitioned from above the mean at Time 1 to below the mean at Time 2. We used the same strategy to create peer attachment change groups and found that similar percentages of participants occupied each group (stable secure peer=41%, stable insecure peer=31%, increaser peer=14%, decreaser peer=14%).

We employed a 2 (Time) X 4 (Attachment change group) repeated measures MANOVA when examining the SACQ outcomes (i.e., academic, social, and personal/emotional functioning) and separate 2 X 4 ANOVAs to explore the effects of attachment change group and time on social competence and academic help-seeking, respectively. We report on post-hoc tests only in cases where there was an initial significant multivariate (or univariate) effect ($p < .05$) or

trend ($p < .10$). Specifically, we followed-up with Tukey's Honestly Significantly Different (HSD) posthoc test when we obtained a main effect for group and paired samples t -tests (comparing freshman year to senior year functioning within each change group) when we obtained a significant Group x Time interaction effect. We also examined the results of Box's test to ensure that the p -value was in an acceptable range before interpreting the results of the MANOVA (Mayers, 2013). We followed up each MANOVA (for Studies 1 and 2) with an exploratory discriminant analysis to determine if different combinations of the dependent variables (i.e., change scores for academic, social, and personal/emotional functioning) could discriminate among the attachment change groups (Grice & Iwasaki, 2007). We only discuss results of the discriminant analyses in cases where we obtained a significant Chi-square value for one or more of the functions.

Results and Discussion

Students evidenced comparable levels of stability in both parent and peer attachment, with 71% of participants reporting similar levels of attachment security to parents and 72% reporting similar levels of attachment security to peers over the 3-year period. Similarly, the percentage of students who evidenced either an increase or decrease in attachment to parents and peers was relatively uniform in this sample.

Relations between Change in Attachment and Change in Student Functioning

Academic, social, and emotional functioning. Multivariate analyses revealed that there was no interaction between change in parent attachment security and time on any of the SACQ variables (i.e., academic, social, personal/emotional functioning). That is, the four attachment groups did not seem to evidence differential change in these areas of functioning during the college years. However, there was a significant main effect of attachment change group for all

three SACQ outcomes [$F(3,123) = 3.78, p = .012$ Academic Adjustment; $F(3,123) = 3.00, p = .033$ Social Adjustment; $F(3,123) = 4.65, p = .004$ Emotional Adjustment]. Post-hoc tests showed that, as hypothesized, the stable secure and stable insecure groups differed with respect to academic adjustment, personal/emotional adjustment, and there was a trend ($p=.07$) for the groups to differ on social adjustment. These findings tended to support to the idea that consistently high attachment security to parents affords students benefits across all domains of functioning during the college years. There also was a main effect of time for social and emotional functioning, such that participants reported significant improvements in their social ($M_{T1}=6.56, SE=.13$ vs. $M_{T2}=7.02, SE=.12$) and personal/emotional functioning ($M_{T1}=5.96, SE=.14$ vs. $M_{T2}=6.49, SE=.15$) between the first to last year of college. We were somewhat surprised to see that academic adjustment did not change from freshman to senior year, given that one might expect students to adopt more intrinsically driven academic goals over the course of college, thereby leading to higher levels of academic motivation and engagement.

With respect to *peer* attachment, there was a trend for an attachment change group by time interaction in the multivariate analysis, so we examined whether any of the SACQ subscales evidenced a significant group x time interaction. Indeed, there was a significant interaction of group and time for the social functioning subscale [$F(3,121) = 3.80, p = .012$]. Subsequent paired t-tests showed that one group, “increasers”, evidenced a significant increase in social functioning during the college years [$t(14)=-3.91, p=.002$]. Consistent with our expectations, improvements in one’s peer relationships set the stage for less loneliness and greater confidence in one’s ability to fit in and garner support from a social support network (Figure 1). Similar to the findings for parent attachment, there was a main effect of attachment change group for each of the SACQ variables. A similar pattern of group differences emerged, whereby the “stable

secure” group reported significantly better academic and social functioning compared to the “stable insecure” group. An additional difference emerged between the “stable insecure” and “increaser peer” group, such that students whose peer relationships improved reported social functioning that was more consistent with students who had reported higher levels of peer attachment at one or both time points. Also similar to the findings for parent attachment, there was a main effect of time for social and emotional functioning [$F(1, 121) = 15.54, p < .001$ social; $F(1, 121) = 9.92, p < .002$ emotional], such that social ($M_{T1}=6.59, SE=.13$ vs. $M_{T2}=7.15, SE=.11$) and personal/emotional functioning ($M_{T1}=5.98, SE=.14$ vs. $M_{T2}=6.47, SE=.15$) improved between the first to last year of college.

Academic help-seeking. As hypothesized, there was a significant interaction between parent attachment change group and time [$F(3, 147) = 3.29, p = .022$] when change in academic help-seeking was being predicted. Paired t-tests revealed significant change in academic help-seeking for two of the four attachment change groups; specifically, participants who reported a decline in parental attachment (“decreaser parent”) became less willing to seek academic help over their college career, as did participants in the “stable insecure” group (Table 1; Figure 2). Encouragingly, these findings suggest that improvements in parental attachment security, or above average attachment that is stable, may be protective against this phenomenon. Although we might expect students to solve problems more autonomously by their final year in college, maintaining one’s practice of seeking academic help may be indicative of confidence in one’s social support network that comes, in part, from trusting and communicative relationships with parents.

There was no significant interaction of *peer* attachment change group and time on academic help-seeking, but there was a main effect of group. Post-hoc tests showed that for peer

attachment, the “stable secure” group had higher levels of academic help-seeking than the “stable insecure” group. These findings are consistent with the idea that close, supportive peer relationships may set the stage for a greater willingness, especially in senior year, to enlist academic help. Interestingly, there was a main effect of time, such that the mean level of academic help-seeking *decreased* over time [$M_{T1}=4.17, SE=.06$ vs. $M_{T2}=4.04, SE=.07$; $F(1, 146) = 4.18, p = .043$]. Taken together with the findings for parent attachment, it seems that higher attachment security is associated with *maintaining* one’s practice of seeking help, as opposed to seeking help more often over time.¹

Social competence. There was a significant interaction of parent attachment change group and time on social competence [$F(3,150) = 2.80, p = .042$]. Paired t-tests showed that the only group that evidenced a change in their social competencies over time was the “stable secure” group; more specifically, participants who were relatively high on parental attachment at both time points reported an improvement in their social competencies (Table 1). It was notable that we did not observe similar findings when overall social functioning was examined as an outcome. The measure of social competence employed in the current study (i.e., TSBI) likely captured a different, perhaps more intermediate dimension of students’ social functioning; the measure inquires about the frequency with which students employ specific social skills (e.g., assertiveness, decisiveness, conversational practices), as opposed to the SACQ, which is more affectively oriented and assesses feelings of social connection and loneliness. Accordingly, the

¹At the suggestion of a reviewer, we examined whether parent or peer attachment scores, assessed continuously at Time 1, predicted change in any our study outcomes. In Study 1, Time 1 peer attachment was correlated with a decline in favorable attitudes about academic help-seeking ($r = -.16, p = .045$). This finding may, in part, reflect the overall decline in academic help-seeking over the course of the study. Given that those who decreased in peer attachment reported lower overall levels of academic help-seeking compared to the other groups, however, suggests that *change* in peer attachment, as opposed to initial attachment, may be more informative in differentiating students’ overall willingness to seek academic help.

TSBI might have captured more specific changes in students' social behavior that were not necessarily reflected in their overall sense of social connectedness on campus. It is interesting to consider the implications of the observed increase in social competence skills for the stable secure group, as the effects of improving one's social competences could extend beyond the boundaries of college. That is, the skills assessed in the TSBI may be especially important for success in the workplace, which will be the next step for most study participants. These findings illustrate that having a trusting and communicative relationship throughout the college years may set the stage for success in future endeavors when we would expect parents to be even less involved in their child's day-to-day activities.

With respect to peer attachment, there was a trend for an attachment change group and time interaction on social competence [$F(3,149) = 2.53, p = .059$]. Consonant with the findings for parent attachment, the stable secure group evidenced increases in social competence (Table 1). However, students who evidenced an *increase* in peer attachment also showed an improvement in social competencies, suggesting one or both of the following mechanisms: as students' relationships became deeper and more trusting, they learned new social competencies or strengthened existing competencies. Alternatively, students whose social competencies improved on account of greater maturity, confidence, or self-regulation may have been better positioned to improve the quality of their peer relationships.

Study 2

Study 2 sought to replicate the findings of Study 1 at another university with somewhat different demographic characteristics. Similar to Study 1, Study 2 collected data on parent and peer attachment security early in the college transition and then re-contacted participants during their senior year in order to predict changes in adjustment patterns across 4 years of college.

Adding to the results of Study 1, Study 2 had participants report separately on attachment to mothers and fathers, allowing for a more fine-grained assessment of parental attachment influences. It also included assessment of depressive symptomology and feelings of loneliness to broaden the scope of adjustment outcomes. Details of the methods and results of Study 2 are presented below.

Method

Participants and Procedure

The initial sample for Study 2 included 138 students making the transition from high school to college at a large, public university in the mid-Atlantic region of the United States. Students were recruited into this study through letters sent to the homes of prospective students before their initial matriculation into college. Students were invited to participate in a study “on adjusting to college” and were told that they would be asked to complete surveys their freshman year of college and then again at a later time point in college. The initial sample of participants included 99 females (72%) and 39 males (28%) who were all traditional-aged students ($M_{\text{age}} = 17.67$, $SD = .53$, range = 17-19 years old). The sample was majority Caucasian (68%) but also included a substantial number of African American students (15%) and a smaller number of students identifying as other ethnicities (7%), Asian American (6%), biracial (3%), or Latino (1%). Participants reported being raised predominantly by two biological parents (74%) with a small number being raised by mothers only (10%) and the remainder in some kind of step-family arrangement (16%).

The initial sample of participants completed assessments of their attachment relationship with their mother, father, and peers during the fall semester (early to mid-November) of their freshman year along with measures of their adjustment to college. Of the 138 original

participants, we were able to re-contact 78 (57 females, 21 males) participants (a 57% retention rate) during their senior year, at which point participants completed the same battery of assessment measures they had completed their freshman year. Thus, the final sample size for the analyses presented below was 78. Although our retention rate was relatively low, and lower than in Study 1, it was comparable to other studies that have examined attachment and adjustment outcomes over a number of years of college (e.g., Rice et al., 1995 reported a retention rate of 62% from freshman to junior year of college). Additionally, we found that participants who completed the follow-up assessment did not differ from non-continuers on any of the attachment dimensions or on any adjustment measures, except that non-continuers were somewhat more depressed their freshman year than continuers [$M = 8.98, SD = 8.64$ vs. $M = 6.64, SD = 4.69$; $t(136) = 2.04, p = .04$]. There were also no significant differences in the gender or ethnic composition of continuers compared with non-continuers. Hence, we feel confident that those continuing in the study largely were representative of the larger sample from the initial study.

Measures

Attachment to mothers, fathers, and peers. As in Study 1, The Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) was used to assess security of attachment for each relationship. Participants completed the full 75-item measure, using a paper-and-pencil format, and a single, averaged score for security of attachment to mothers ($\alpha_{T1}=.96$; $\alpha_{T2}=.97$), fathers ($\alpha_{T1}=.96$; $\alpha_{T2}=.97$), and peers ($\alpha_{T1}=.94$; $\alpha_{T2}=.95$) was used in all analyses presented below (items from the Alienation subscale were reverse-scored before being averaged with items from the Trust and Communication subscales). Participants were instructed to report on the maternal and paternal figure who was “most important” to them during their childhood and adolescent years (all participants reported on a mother-figure while two participants left

questions about a father-figure unanswered).

Adjustment to college. Adjustment to college was assessed with the Student Adaptation to College Questionnaire (SACQ, Baker & Siryk, 1986), as in Study 1. We focused on the three most widely used subscales of this measure, Academic Adjustment ($\alpha_{T1}=.89$; $\alpha_{T2}=.90$), Social Adjustment ($\alpha_{T1}=.90$; $\alpha_{T2}=.89$), and Emotional Adjustment ($\alpha_{T1}=.88$; $\alpha_{T2}=.91$). The participants completed the measure via paper-and-pencil at Time 1 and used an online version of the measure at Time 2. We used an averaged score for each subscale in analyses presented below.

Depression. In order to assess depressive symptoms, we used the total symptom score from the Beck Depression Inventory-II (Beck, Steer, & Garbin, 1996), a widely used, valid and reliable measure of depressive symptomology that can be used with both clinical and non-clinical samples. For ethical reasons, we chose to leave off the question asking about suicidal ideation or intent. The remaining 20 questions ask about a range of depressive symptoms, including depressed mood, loss of interest in daily activities, feelings of worthlessness, excessive guilt, as well as sleep and eating difficulties. Items were rated on a 0-3 scale, with a “0” indicating absence of symptoms and a “3” indicating symptoms were present almost all of the time or caused marked distress for the person. The measure was reliable in our sample ($\alpha_{T1}=.84$; $\alpha_{T2}=.94$).

Loneliness. We assessed feelings of loneliness using the UCLA Loneliness Scale-R (Russell, Peplau, & Cutrona, 1980), a widely used measure of loneliness within college samples. Sample items include “I have nobody to talk to” and “I feel left out”, rated on a 4-point scale from *rarely* to *often*, with higher scores indicating greater loneliness. We utilized a mean score, averaging across all 20 items on the measure, which was highly reliable in our sample ($\alpha_{T1}=.93$; $\alpha_{T2}=.94$).

Plan of Analysis

We used the same procedure as in Study 1 in order to create four groups of participants, reflecting stability or change in attachment security with parents and peers (separately) from freshman to senior year. Based on a mean-split, we designated participants as (1) *Stable Secure* if they were above the mean in secure attachment freshman and senior year ($n = 32$ for Mothers, $n = 27$ for Fathers, $n = 28$ for Peers); (2) *Stable Insecure* if they were below the mean freshman and senior year ($n = 19$ for Mothers, $n = 23$ for Fathers, $n = 15$ for Peers); (3) *Increasers* if they were below the mean freshman year and above the mean senior year ($n = 9$ for Mothers, $n = 13$ for Fathers, $n = 13$ for Peers); and (4) *Decreasers* if they were above the mean freshman year and below the mean senior year ($n = 10$ for Mothers, $n = 7$ for Fathers, $n = 15$ for Peers). Overall, 73% of the sample showed stability in their attachment relationship with their mother [$\chi^2(1, 70) = 13.43, p = .0001; \kappa = .44$], 72% showed stability with their father [$\chi^2(1, 70) = 13.39, p = .0001; \kappa = .43$], and 61% showed stability with their peers [$\chi^2(1, 71) = 2.43, p = .12; \kappa = .19$]. Attachment representations were fairly stable across the years of college, but notable minorities of students demonstrated a changing representation of their attachment relationship. Attachment stability was somewhat lower for peer relationships than for mother and father relationships, which makes sense given the changing nature of students' peer groups across time in college.

Identical to Study 1, in order to assess the impact of mother, father, and peer attachment stability on changes in functioning from freshman to senior year, we conducted a series of 2 (time) x 4 (Attachment-Change Group) ANOVAs (separately for Depression and Loneliness) and MANOVAs (for the three subscales of the SACQ) with repeated measures, where time was a within-group factor and change group a between-group factor. We employed Box's test, post-hoc tests, and discriminant analyses in the same fashion as in Study 1.

Results and Discussion

Relations between Attachment Change Group and Adjustment Outcomes

Adjustment to college. We found a multivariate interaction effect between time and mother attachment-change group in predicting changes in adjustment to college [$F(9, 156) = 2.47, p = .012$]. Univariate analyses suggested that this effect was significant for the academic [$F(3, 66) = 3.90, p = .013$] and emotional [$F(3, 66) = 5.35, p = .002$] adjustment subscales of the SACQ. Paired sample follow-up tests of mean group differences (shown in Table 2) suggest that those participants who reported an increase in their security of attachment to their mothers (the increasers) showed significant improvements in their academic and emotional adjustment from freshman to senior year of college. Also, participants in the stable insecure group with their mothers showed significant declines in their emotional adjustment across that time period (Figure 3). The other two groups did not show significant changes in their adjustment levels over time. In addition to this interaction effect, we found significant univariate main effects of attachment-change group on social and emotional adjustment [$F(3, 66) = 4.29, p = .008$ social adjustment; $F(3, 66) = 3.36, p = .024$ emotional adjustment]. Posthoc analyses suggested that participants in a stable-secure attachment relationship with mothers showed significantly better overall social adjustment [$M_{stable-secure} = 7.13 (.17)$ vs. $M_{stable-insecure} = 6.19 (.21), p = .005$], and emotional adjustment [$M_{stable-secure} = 6.57 (.21)$ vs. $M_{stable-insecure} = 5.66 (.27), p = .042$] than participants in a stable insecure relationship with mothers. These results are consistent with those from Study 1 in demonstrating that a pattern of increasing security in attachment relationships has notable positive benefits for students' adjustment to college. This pattern was observed for peer attachment in Study 1, whereas it appears to be the case for maternal attachment in Study 2. Additionally, participants in a stable insecure relationship with their mothers seem to show

declines in their emotional adjustment to college and generally lower levels of adjustment when compared to those stable in their security with their mothers.

The follow-up discriminant analysis suggested that both emotional and academic functioning were most influential in differentiating the maternal attachment change groups. We found three discriminant functions: The first function explained 82% of the variance (canonical $R^2=.23$), and the second and third functions explained 17% and 2% of the variance, respectively. Combined, the discriminant functions significantly differentiated the attachment change groups [$\Lambda=.72$, $\chi^2(9)=21.24$, $p=.012$]; removing the first function (or the first and second functions) did not significantly differentiate the groups (Field, 2013). The correlations between the outcomes and the discriminant functions revealed that change in emotional adjustment loaded highly on function 1 ($r=.90$), as did change in academic adjustment ($r=.77$), suggesting that these variables were best able to distinguish the maternal attachment change groups. In addition, the discriminant function plot showed that the first function maximally discriminated between the students who reported consistently low maternal attachment and those who reported an increase in maternal attachment (Field, 2013).

We found no significant main or interaction effects on adjustment for father attachment change-group, suggesting that father attachment had little effect on SACQ adjustment dimensions within this sample of students. For peer attachment, we again found no significant interaction effects between attachment group and time but we did find significant main effects of attachment-change group for all three dimensions of the SACQ [$F(3, 67) = 3.07$, $p = .034$ academic adjustment; $F(3, 67) = 5.10$, $p = .034$ social adjustment; $F(3, 67) = 3.16$, $p = .034$ emotional adjustment]. Posthoc tests showed that those participants in the stable-secure peer attachment group demonstrated greater overall academic adjustment [$M_{stable-secure} = 6.74 (.16)$ vs.

$M_{stable-insecure} = 6.01 (.21)$, $p = .035$], social adjustment [$M_{stable-secure} = 7.32 (.17)$ vs. $M_{stable-insecure} = 6.22 (.24)$, $p = .002$], and emotional adjustment [$M_{stable-secure} = 6.75 (.22)$ vs. $M_{stable-insecure} = 5.66 (.30)$, $p = .024$] than those in the stable-insecure group.

Depression. We found a main effect of maternal attachment-change group on depression levels [$F(3, 66) = 6.41$, $p = .001$]. Posthoc analyses suggested that students in the stable-insecure group were significantly more depressed than students in any of the other groups [$M_{stable-insecure} = 11.63 (1.24)$ vs. $M_{stable-secure} = 6.16 (.95)$, $M_{decreasers} = 4.85 (1.70)$, $M_{increasers} = 3.94 (1.80)$, p s ranged from .004 to .01 for pairwise comparisons].

There were no main or interaction effects of father attachment-change group on depression levels. Peer attachment-change group had a significant main effect on depression levels [$F(3, 67) = 4.68$, $p = .005$]. Posthoc analyses showed that students in the stable-insecure peer attachment group showed significantly more depressive symptoms than those in the stable-secure group [$M_{stable-insecure} = 10.53 (1.43)$ vs. $M_{stable-secure} = 5.48 (1.05)$, $p = .029$] or in the decreasers group [$M_{decreasers} = 4.57 (1.43)$, $p = .022$].² Overall, findings for depression highlight the role of stable insecure attachment to mothers and peers as a correlate of heightened depression in both freshman and senior year.

Loneliness. We found a significant interaction effect of maternal attachment-change group and time on loneliness [$F(3, 65) = 3.20$, $p = .029$]. Table 2 shows that students in the increaser group showed significantly lower levels of loneliness from freshman to senior year, whereas the other three groups did not change significantly. We also found a significant main effect of attachment-change group on loneliness [$F(3, 65) = 5.65$, $p = .002$]. Students in the

²As in Study 1, we examined whether continuous parent or peer attachment scores at baseline were correlated with change in the outcomes. Peer attachment at baseline was associated with smaller decreases in depression over time ($r = -.25$, $p = .035$), suggesting that a closer relationship with friends at college entry was protective against depressive symptoms.

stable-insecure group [$M = 1.93 (.10)$] reported significantly more loneliness than students in the stable-secure [$M = 1.47 (.07)$], increaser [$M = 1.48 (.14)$], or decreaser groups [$M = 1.39 (.14)$]. Finally, we found a significant main effect of time on loneliness as well [$F(1, 65) = 4.94, p = .030$]. A paired sample t-test showed that, overall, loneliness levels decreased marginally from freshman [$M = 1.63 (.51)$] to senior year [$M = 1.54 (.52)$], [$t(69) = 1.61, p = .11$]. In contrast, father attachment-change group did not show any significant main or interaction effects on loneliness³.

Peer attachment-change group had a significant main effect on loneliness [$F(3, 66) = 8.45, p = .0001$]. Students in the stable-secure group reported less loneliness overall than those in the stable-insecure group [$M_{stable-secure} = 1.33 (.08)$ vs. $M_{stable-insecure} = 1.96 (.11), p = .0001$] or decreasers [$M_{stable-secure} = 1.33 (.08)$ vs. $M_{decreasers} = 1.70 (.10), p = .025$]. There was also a trend for an interaction between peer attachment-change group and time [$F(3, 66) = 2.29, p = .086$]. Follow-up paired-sample t-tests suggested that the stable secure group showed significantly less loneliness from freshman to senior year of college (see Table 3). Taken together, our data for loneliness suggested that students with stable secure attachment relationships with mothers and peers demonstrated less loneliness than those with stable insecure attachments. Moreover, increases in maternal attachment security were most predictive of decreasing levels of loneliness over time.

General Discussion

Across two studies, the current paper investigated stability and change in emerging adult college students' attachment relationships with their parents and close peers and the implications of those relationships for their academic, social, and emotional functioning during four years of

³Attachment to father at baseline was associated with greater increases in loneliness ($r = .25, p = .038$).

college. First, our results suggest that attachment relationships are *relatively* stable during the college years, especially with regard to parents, supportive of previous studies. In both studies, we found that roughly 70% of students who reported a secure or insecure relationship with a parent during their freshman year continued to report such a relationship their senior year. This number is consistent with previous studies that have found stability rates of about 70% for attachment representations across one semester to one year of college life (Lopez & Gormley, 2002; Scharfe, 2003). Stability of peer attachment also was approximately 70% for Study 1 but somewhat lower for Study 2 (61%), which may be influenced, in part, by the fact that students' peer groups change during the course of their college life. Previous research has also demonstrated lowered levels of stability for peer attachment from freshman to junior year of college (Rice et al. 1995).

Next, we found that two particular patterns of relationship stability or change with parents and peers were predictive of healthy adjustment outcomes. First, students who reported a stable secure relationship with their parents and peers not only reported better overall academic, social, and emotional adjustment to college but also reported improvements in their social competencies from freshman to senior year. In Study 2, we found that it was a stable secure relationship with mothers in particular that predicted better academic, social, and emotional adjustment, as well as less loneliness, and fewer symptoms of depression. The second pattern with parents and peers that was predictive of healthy adjustment outcomes was one of *increasing* attachment security from freshman to senior year. In Study 1, this effect was seen primarily for peer attachment, where students who reported increased security of attachment to peers reported better social functioning over time in college. In Study 2, this effect was seen with maternal attachment; students who reported an increasingly secure relationship with their mothers

evidenced better academic and emotional adjustment to college and less loneliness over time. It is worth noting that in the discriminant function analysis in Study 2, academic and emotional adjustment best differentiated maternal attachment groups. Other researchers also found that parental attachment most heavily influences a student's academic and personal success in college and was somewhat less connected to students' social functioning in college, where, presumably, peer factors play a larger role (Cutrona et al., 1994).

Finally, we found that students reporting a stable insecure pattern of attachment to their parents were particularly disadvantaged in terms of their college adjustment over time. Not only did these students report worse overall academic, social, and emotional adjustment than the other three groups, they reported significant declines in their emotional adjustment and less willingness to seek academic help over time, perhaps reflecting their entrenched negative expectations that others are available to help them. We discuss the meaning and implications of these changing patterns of relationship quality below.

Patterns of Attachment Security and Adjustment Outcomes

Our results highlight the value of an ongoing secure attachment relationship with parents during the college years. Consistent with past research, these results suggest that late adolescent college students turn to their parents for emotional support during difficult times and that the parent-student relationship provides much needed comfort and guidance (Guassi Moreira & Telzer, 2015; Lopez & Gormley, 2002; Rice et al., 1995; Sun et al., 2000). It is quite possible that as emerging adults move beyond the squabbling characteristic of high school parent-student exchanges, they form increasingly close and supportive relationships and transition to more adult-like relationships with their parents. Our results suggest that stable secure relationships with parents were associated with enhanced social skills and competencies during the college

years, suggesting that students may be asking their parents for advice on how to handle social exchanges with their peers. Alternatively, students may be enacting social competencies modeled by their parents. Our findings are consistent with Sun et al. (2000), who showed that students whose closeness with their parents deteriorated between freshman and senior year showed corresponding declines in their relational or instrumental competencies over this time period.

In addition to stable secure relationships, emerging adults who were able to move towards a more secure relationship with their parents during the college years also reaped benefits in terms of their adjustment outcomes. This pattern was seen primarily with maternal relationships and suggests that healing may have occurred in these students' relationships with their mothers from the beginning to the end of college. Students who reported improved relationships with mothers reported less loneliness and better emotional adjustment, suggesting that the benefits were seen primarily in how these students felt about themselves and their internalized experiences in college. These results are consistent with two other studies that have examined longitudinal changes in representations of attachment or family cohesiveness and college adjustment. First, Lopez and Gormley (2002) demonstrated that students who moved from an insecure to a secure attachment style during their first year of college reported less psychological distress adjusting to college. Second, Guassi Moreira and Telzer (2015) reported that increased family cohesiveness over the first two months of college was a unique predictor of decreased depressive symptoms during that time period. Across these three studies, results suggest that students who were able to view their primary attachment relationships in a more favorable light also reported fewer symptoms of distress associated either with the initial transition to college or throughout their four years of college.

We also found that a pattern of increasing security of attachment to peers predicted

greater adjustment to college over time. We believe that increasingly secure attachment relationships with peers reflects a sense of integration into college. These results add to a growing literature showing that students who are better integrated into their college communities thrive academically and are more likely to persist and graduate from college, whereas students who fail to make good connections at college are more likely to transfer, drop out, or never graduate (Mattanah, 2016b; Pascarella & Terenzini, 2005; Tinto, 1993).

Finally, students with a stable insecure attachment to their parents seem to be a particularly high-risk group in terms of their adjustment outcomes throughout college. These students demonstrated a pattern of worsening adjustment over time, showing increasing levels of depression, loneliness, social isolation, and less willingness to seek academic help when needed. It would appear that in the absence of parental support, and perhaps given a history of insecure attachment representations, these students do not expect a good response from their peers or professors and this leads them to becoming increasingly socially isolated and unwilling to seek help when they need it. Unfortunately, as mentioned above, a lack of social and academic integration has been linked with academic failure and a greater likelihood of dropping out of college. In support of this idea, Lopez and Gormley (2002) found that students with stable insecure attachment representations were most likely to use suppressive coping styles, which included denial, avoidance, and escapism. These authors suggest that this confused and escapist way of dealing with problems put these students “at particular risk for early dropout” (p. 362).

Limitations

Although this study found interesting links between changing patterns of secure attachment to parents and peers and adjustment outcomes in college, a number of methodological issues limit the generalizability and implications that can be drawn from the results. First, it

should be noted that our sample sizes were fairly small, especially in Study 2, which may have underpowered some of our analyses. Additionally, our results do not generalize to the roughly 50% of emerging adults who do not attend college after graduating from high school in the United States (Arnett, 2015). Little is known about this population as most research has focused on emerging adult college students, who are much easier to access and study. However, one fairly recent study has found that relationships with mothers, in particular, improve following the transition from high school, even for emerging adults who do not attend college, and that parental support in the post-high school transition is an important predictor of adjustment outcomes (Levitt et al., 2007). Nonetheless, more research is needed to examine whether changing patterns of attachment security with mothers, fathers, and peers affect emerging adults across a broad range of experiences, including transitioning into the work world, marriage, parenthood, and/or college life.

Second, although both studies were longitudinal, we cannot conclude that the changing patterns of attachment security *caused* the adjustment outcomes reported on by the students. It is quite possible that students whose adjustment was worsening in college sour in their report of their attachment relationship with their parents and peers as well. This is particularly a problem when using only one source of information for both the predictor and outcome variables in the study. In future studies, it would be helpful to gather informant reports on the students' adjustment outcomes so as avoid the problem of a single reporter describing all of their experiences in a generally positive or negative light.

Third, in creating our attachment change groups we used cut-points within our own datasets rather than relying on established standards for defining secure versus insecure attachment. Although this is a standard practice to create categorical variables and to ensure a

sufficient number of participants in each cell, it may lead to difficulties with replicating our results in other samples. Finally, our study focused exclusively on students' attachment relationship with their parents and peers, whereas other aspects of these relationships are also important to examine when predicting adjustment outcomes over time. For example, changing patterns of communication and family structure and conflict have all been shown to be important predictors of social and emotional adjustment during the college years (Lucas-Thompson & Hostinar, 2013; Mattanah, 2016b). Notwithstanding these limitations, our results have important implications for higher education personnel who work with college students who are in emotional distress. We discuss these implications below.

Counseling Implications

Based on the significant links between attachment security and adjustment outcomes across four years of college, we urge counseling professionals working with college students in distress to routinely assess students' attachment relationships with their parents and peers. Instruments such as the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987), Parental Attachment Questionnaire (Kenny, 1987), or the Parental Bonding Instrument (Parker, Tupling, & Brown, 1979) are easy to administer, require less than five minutes to complete, and provide a reasonable picture of the students' current and/or historical relationship with their parents. Peer relationships also can be assessed with the IPPA, or with measures such as the Network of Relationships Inventory (Furman & Buhrmester, 2009). Students with insecure relationships need to be seen as a 'high-risk' group who will likely struggle with the transition to college and may become increasingly socially withdrawn and emotionally distressed as college progresses, unless they are able to form compensatory relationships in college, such as with peers or faculty advisors, or improve their relationship with their parents. Importantly, our results

suggest that some students are able to improve their relationship with parents over time in college, a process that may be facilitated by college counselors using attachment-based psychotherapies to help students forgive their parents' shortcomings and develop a more mature, nuanced representation of their parents as attachment figures (Costello, 2013). On the other hand, students with persistently insecure attachment relationships with parents will need assistance developing supportive relationships with their peers and professors at college, thereby aiding them in their integration into the college environment. Recent research has shown that group-based intervention programs aimed at teaching social skills, cognitive restructuring of maladaptive thoughts, and mindfulness based stress-reduction techniques can be quite helpful in ameliorating distress among college students and improving their social relations in college (Conley, Durlak, & Kirsch, 2015).

In conclusion, the current set of studies are among the first to examine patterns of security of attachment to parents and peers across the four years of college. We found that attachment representations were quite stable across those four years, with students who maintained secure representations of their attachment to parents and peers faring the best in terms of their academic, social, and emotional adjustment outcomes in senior year. Students whose representations improved across the four years also showed better adjustment outcomes over time, whereas those whose representations remained insecure were the worst off. Future research should aim to expand the scope of this longitudinal inquiry by focusing on non-college attending adults, including data from multiple informants, and charting parents' perceptions of relationship quality over time.

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Table 1

Means and Standard Deviations of College Adjustment by Attachment Change Group and Time: Study 1

	Stable Secure		Stable Insecure		Increasers		Decreasers	
	Parent <i>n</i> =57/65 <i>M</i> (<i>SD</i>)	Peer <i>n</i> =57/63 <i>M</i> (<i>SD</i>)	Parent <i>n</i> =37/45 <i>M</i> (<i>SD</i>)	Peer <i>n</i> =34/47 <i>M</i> (<i>SD</i>)	Parent <i>n</i> =17/23 <i>M</i> (<i>SD</i>)	Peer <i>n</i> =15/22 <i>M</i> (<i>SD</i>)	Parent <i>n</i> =14/22 <i>M</i> (<i>SD</i>)	Peer <i>n</i> =18/21 <i>M</i> (<i>SD</i>)
Academic Adjustment								
First Year	6.61 (.92)	6.63 (.84)	6.10 (.97)	6.07 (.97)	6.00 (.98)	6.09 (1.15)	6.54 (1.02)	6.30 (1.11)
Senior Year	6.70 (1.03)	6.65 (1.01)	6.10 (1.08)	6.11 (1.12)	6.42 (.92)	6.74 (.79)	6.34 (.77)	6.29 (.84)
Social Adjustment								
First Year	6.98 (1.23)	7.06 (1.18)	6.60 (1.26)	6.41 (1.23)	6.54 (1.43)	6.52 (1.58)	6.12 (1.55)	6.39 (1.46)
Senior Year	7.40 (1.06)	7.34 (1.15)	6.74 (1.10)	6.43 (1.11)	6.96 (1.28)	7.93 (.82)	6.96 (1.40)	6.90 (.89)
Emotional Adjustment								
First Year	6.32 (1.46)	6.25 (1.46)	5.68 (1.34)	5.77 (1.34)	6.30 (1.06)	6.27 (1.16)	5.54 (1.31)	5.66 (1.32)
Senior Year	7.01 (1.37)	6.88 (1.44)	5.91 (1.57)	6.13 (1.64)	6.66 (1.33)	6.96 (1.20)	6.36 (1.37)	5.91 (1.24)
Academic Help-Seeking								
First Year	4.38 (.62)	4.48 (.49)	4.04 (.71)	3.88 (.83)	3.90 (.80)	4.26 (.51)	4.34 (.66)	4.06 (.81)
Senior Year	4.30 (.64)	4.24 (.74)	3.76 (.77)	3.80 (.74)	4.07 (.79)	4.21 (.65)	3.93 (.75)	3.91 (.71)
Social Competence								
First Year	3.72 (.51)	3.77 (.49)	3.46 (.55)	3.35 (.62)	3.47 (.74)	3.59 (.40)	3.47 (.55)	3.46 (.67)
Senior Year	3.93 (.45)	3.88 (.50)	3.47 (.55)	3.40 (.57)	3.63 (.70)	3.91 (.44)	3.38 (.47)	3.42 (.55)

Note. Bolded values denote a difference in first-year and senior year values at $p < .05$ level. Within-group paired-tests were performed only in cases where there was a significant interaction or a trend for the outcome of interest. The first n listed is for analyses of the SACQ scales, which drew on a slightly smaller sample; the second n is for the analyses of academic help-seeking and social competence, respectively.

Table 2

Means and Standard Deviations of All Outcome Variables across Parental Attachment-Change Group and Time: Study 2

	Stable Secure		Stable Insecure		Increasers		Decreasers	
	Mother <i>n</i> = 32 <i>M</i> (<i>SD</i>)	Father <i>n</i> = 27 <i>M</i> (<i>SD</i>)	Mother <i>n</i> = 19 <i>M</i> (<i>SD</i>)	Father <i>n</i> = 23 <i>M</i> (<i>SD</i>)	Mother <i>n</i> = 10 <i>M</i> (<i>SD</i>)	Father <i>n</i> = 13 <i>M</i> (<i>SD</i>)	Mother <i>n</i> = 10 <i>M</i> (<i>SD</i>)	Father <i>n</i> = 7 <i>M</i> (<i>SD</i>)
Academic Adjustment								
First-Year	6.32 (.83)	6.38 (.92)	6.30 (.83)	6.35 (.89)	6.19 (.62)	6.16 (.84)	6.36 (.89)	6.13 (1.12)
Senior-Year	6.88 (.24)	6.63 (1.02)	5.87 (.24)	6.28 (1.35)	7.01 (.39)	6.95 (.98)	6.40 (1.53)	6.31 (1.49)
Social Adjustment								
First-Year	6.97 (1.04)	6.94 (.99)	6.25 (1.30)	6.51 (1.20)	6.86 (.55)	7.22 (.78)	7.24 (.70)	6.57 (1.37)
Senior-Year	7.28 (1.08)	7.19 (1.09)	6.13 (1.28)	6.45 (1.33)	7.28 (.69)	7.20 (.98)	6.62 (1.43)	6.48 (1.21)
Emotional Adjustment								
First-Year	6.40 (1.19)	6.28 (1.15)	6.10 (1.29)	6.47 (1.26)	6.35 (.87)	6.56 (.94)	6.63 (1.23)	5.69 (1.38)
Senior-Year	6.74 (1.50)	6.77 (1.36)	5.23 (1.65)	6.06 (1.97)	7.41 (1.03)	6.38 (1.29)	6.51 (1.28)	5.99 (1.81)
Depression								
First-Year	6.50 (4.37)	6.63 (4.04)	9.52 (5.69)	7.48 (5.56)	5.55 (3.35)	6.76 (4.53)	4.20 (2.90)	6.29 (5.76)
Senior-Year	5.75 (6.24)	5.55 (6.01)	13.74 (11.50)	9.65 (10.69)	2.33 (2.19)	6.76 (7.43)	5.50 (8.64)	8.00 (13.55)
Loneliness								
First-Year	1.48 (.43)	1.53 (.43)	1.95 (.61)	1.83 (.65)	1.73 (.46)	1.43 (.24)	1.37 (.13)	1.58 (.50)
Senior-Year	1.45 (.53)	1.45 (.38)	1.90 (.54)	1.70 (.60)	1.24 (.16)	1.34 (.34)	1.42 (.33)	1.72 (.79)

Note. Bolded values denote a difference in first-year and senior year values at $p < .05$ level. Within-group paired-tests were performed only in cases where there was a significant interaction or a trend for the outcome of interest.

Table 3

Means and Standard Deviations of All Outcome Variables across Peer Attachment-Change Group and Time: Study 2

	Stable Secure <i>n</i> = 28	Stable Insecure <i>n</i> = 15	Increases <i>n</i> = 13	Decreases <i>n</i> = 15
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Academic Adjustment				
First-Year	6.45 (.92)	6.07 (.81)	6.10 (1.00)	6.49 (.85)
Senior-Year	7.03 (.88)	5.96 (1.26)	6.26 (1.48)	6.51 (1.04)
Social Adjustment				
First-Year	7.16 (.96)	6.19 (1.36)	6.80 (.88)	6.79 (.89)
Senior-Year	7.48 (1.03)	6.26 (1.37)	6.62 (1.37)	6.58 (.85)
Emotional Adjustment				
First-Year	6.57 (1.19)	5.72 (.95)	6.15 (1.10)	6.70 (1.22)
Senior-Year	6.92 (1.40)	5.60 (2.13)	6.10 (1.61)	6.40 (1.02)
Depression				
First-Year	6.00 (4.00)	8.20 (5.14)	9.00 (6.32)	5.26 (3.20)
Senior-Year	4.96 (5.46)	12.87 (11.78)	10.30 (11.50)	3.86 (3.64)
Loneliness				
First-Year	1.40 (.39)	2.02 (.61)	1.69 (.52)	1.60 (.39)
Senior-Year	1.25 (.29)	1.90 (.64)	1.51 (.37)	1.79 (.54)

Note. Bolded values denote a difference in first-year and senior year values at $p < .05$ level. Within-group paired-tests were performed only in cases where there was a significant interaction or a trend for the outcome of interest.

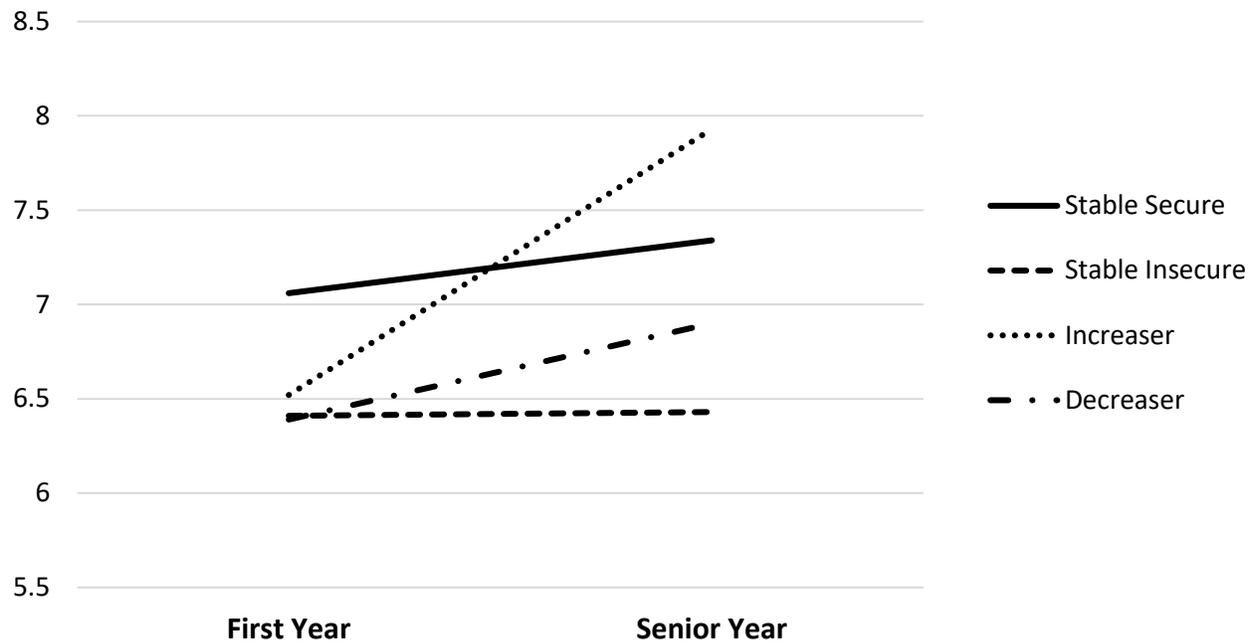


Figure 1. Change in social functioning by *peer* attachment change group. The “increaser” group was the only group to evidence a significant improvement in social functioning. (Study 1)

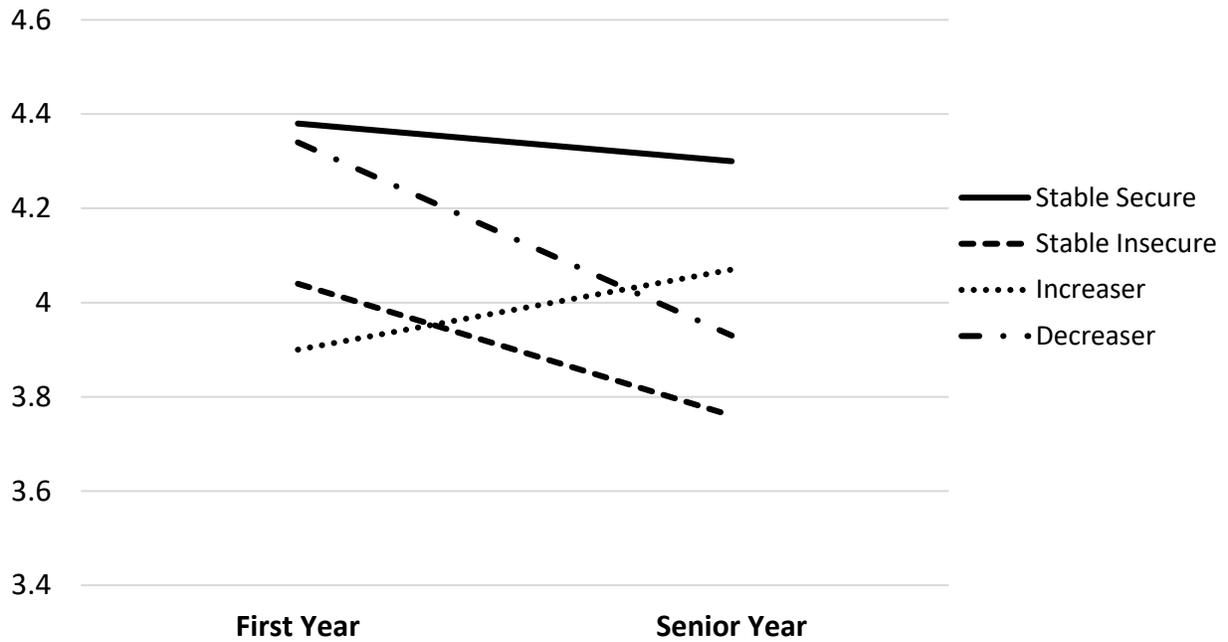


Figure 2. Change in academic help-seeking by parent attachment change group. The “stable insecure” and “decreaser” groups evidenced significant declines in help-seeking between the first and last year of college. (Study 1)

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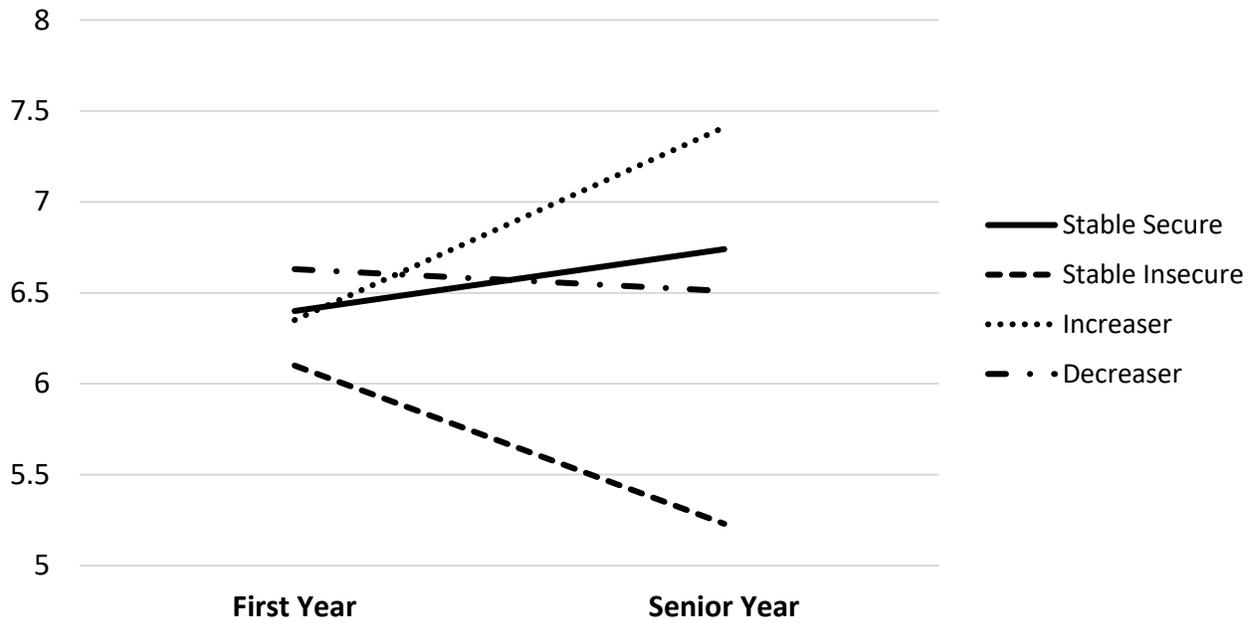


Figure 3. Change in emotional functioning by *mother* attachment change group. The “stable insecure” group evidenced a significant decline in emotional functioning between the first and last year of college, while the “increaser” group evidenced a significant improvement. (Study 2)

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