Adolescents' Emotional Well-Being during Developmental Turning Points: Help and Hindrance from Interpersonal Relationships

by

Adam A. Rogers

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Approved April 2017 by the
Graduate Supervisory Committee:

Kimberly A. Updegraff, Chair
Masumi Iida
Thao Ha
Thomas J. Dishion

ARIZONA STATE UNIVERSITY

May 2017

ABSTRACT

In two complementary studies, I used an innovative ecological momentary assessment (EMA) design to examine associations between adolescents' daily interactions with parents and peers and their mood states during two developmentally normative, yet demanding contexts: romantic relationships and the transition to college. The first study examined how adolescents' daily romantic relationship experiences (e.g., romantic emotionality, conflict, affiliation) were related to negative affective states. Eighty-eight adolescent romantic couples (M_{age} = 16.74, *SD* = 0.96 ; 44% Latina/o, 42% White) completed short electronic surveys twice-weekly for 12 weeks, which assessed their affective states and their relationship processes (24 total possible surveys). Results indicated that greater conflict and negative romantic emotionality predicted greater within-person fluctuations in same-day negative affect. Greater daily affiliation with a romantic partner predicted slightly lower levels of same-day negative affect; positive romantic emotionality did not significantly predict negative affect.

Study 2 examined first-year college students' growth trajectories in positive and negative affect across the transition to college (i.e., spanning the entire first semester), predicted said trajectories and daily affective states. Participants were 146 first-year college students from a large southwestern university entering their first semester of college (M_{age} = 17.8, *SD* = 0.50). Electronic diary surveys were administered to students twice weekly between July and December of 2014, so as to span the transition to college and the entire first semester, and assessed daily affective states and interpersonal interactions. Results indicated that students decreased in their positive affect gradually across the first semester, but remained stable in their negative affect. Significant

variability emerged around these average trends, and was predicted by indices of conflict and involvement with parents and friends. Generally, greater involvement with friends and parents was associated with greater positive and less negative affect, whereas greater conflict with these important social groups predicted greater negative affect. Together, these studies underscore the importance of positive attachments during developmentally-challenging contexts experienced in adolescence.

TABLE OF CONTENTS

Page

CHAPTER Page

CHAPTER Page

LIST OF TABLES

Table Page

General Introduction

Adolescence is a sensitive period for the development of psychopathology. Although the classical notion of adolescence as a universal time of "storm and stress" (Hall, 1904) is widely rejected, it is nevertheless apparent that some challenges, including those pertaining to mental health, are still more common during this developmental period (Arnett, 1999). For example, national estimates suggest that rates of depression rise sharply at the onset of puberty and climb steadily from early to late adolescence (Merikangas et al., 2010; Thapar, 2012). For this reason, many prevention and intervention efforts aim to promote psychological well-being during this period.

One of the challenges that interventionists face is that the etiology of psychopathology is complex and can include underlying genetic risks and biological factors associated with puberty (Cichetti & Toth, 1998). Nevertheless, research points to the role of interpersonal relationships as a consistent antecedent of adolescents' psychological well-being. For example, higher quality family and peer relationships and greater perceived support from others are associated with fewer internalizing problems among adolescents (Nangle, Erdley, Newman, Mason, & Carpenter, 2003; Stice, Ragan, & Randall, 2004). Further, social rejection, greater interpersonal conflict, and lower quality relationships predict greater internalizing problems (Hawker & Boulton, 2000; Restifo & Bogels, 2009, Rueter, Scaramella, Wallace, & Conger, 1999). For this reason, many existing interventions aim to promote adolescent mental health by leveraging these relationship assets.

Intervention efforts may find added success when aimed at specific developmental and/or situational experiences (Seidman & French, 2004). Elder (1998)

forwarded the notion of turning points, or events and/or circumstances that can significantly alter individuals' developmental trajectories moving forward. Turning points result from challenging situational experiences that disrupt existing routines and social structures (e.g., marriage, parenthood). The period of adolescence comprises many potential turning points, given that it is a time of significant developmental and ecological change. In addition to the physical, cognitive, social, and identity-related changes inherent to normative developmental progression, adolescents are also experiencing major shifts in their social contexts (e.g., academic settings, peer contexts, family relationships, romantic relationships). These overlapping changes can periodically alter adolescents' stage-environment fit (Eccles & Midgley, 1993), and thereby act as turning points in their mental health trajectories for better or for worse (Guttman & Eccles, 2007, Rutter, 1987). Because potential turning points present opportunities for both growth and decline, they also represent optimal periods for prevention and early intervention efforts that seek to promote well-being (Seidman & French, 2004).

In this dissertation, I investigated the positive and negative influences of interpersonal relationships on adolescents' psychological well-being within developmentally demanding contexts that may act as potential turning points in adolescents' mental health trajectories. In particular, I focused on two potentially vulnerable contexts: romantic relationships and the transition to college. Both of these contexts are (a) developmentally normative in the sense that most adolescents will experience them, and (b) suggested in the literature to be critical contexts for the development of psychological difficulties (Furman, Brown & Feiring, 1999; Pancer, Hunsberger, Pratt, & Alisat, 2000). A greater understanding of how interpersonal

relationships contribute to well-being (for better or for worse) within these challenging contexts can lend valuable insights into prevention and intervention efforts that aim to promote adolescent mental health.

Methodologically, however, it is somewhat more challenging to study social and developmental processes during these periods. Turning points are often relatively short-lived and can span no longer than several months. Furthermore, these circumstances are characterized by their tendency to destabilize existing routines and social structures, meaning that much of the meaningful variability in social dynamics and well-being fluctuate from day-to-day. Traditional cross-sectional and longitudinal designs in which assessments are lagged by several months and even years may not be ideally suited to study such phenomena, as they may fail to detect the shorter, more fine-grained processes as they unfold and contribute to development. For this reason, the present dissertation utilizes ecological momentary assessment (EMA) methods (also referred to as daily diary methods), or intensive, repeated self-reports on events close to when they occur (i.e., same-day) (Iida, Shrout, Laurenceau, & Bolger, 2012). EMAs have several advantages in these situations. First, they are better equipped to capture day-to-day fluctuations in social and emotional phenomena (Bolger, 1989). Second, because participants report on their experiences on the same day that they occur, assessments have greater ecological validity and circumvent problems of retrospective recall (Laurenceau & Bolger, 2005). Finally, EMAs allow for the study of *within-person* change processes, inherently controlling for temporally stable variables (e.g., personality characteristics), and thereby more precisely depicting individual differences in developmental processes (Bolger et al., 1989).

In both studies, psychological well-being was indexed as adolescents' daily affective states, specifically their *positive affect* and *negative affect*. At first glance, these constructs might appear to represent opposite ends of a continuum of general positive and negative emotionality. However, positive and negative affect have emerged as distinct, orthogonal dimensions, and comprise the fundamental underlying dimensions of self-reported mood (Watson, Clark, & Carey, 1988). Positive affect refers to a high-arousal state of pleasurable engagement, enthusiasm, and alertness. Low positive affect indicates a state of lethargy and sadness. Negative affect, on the other hand, indicates aversive emotional states, such as anger, irritability, and fear. Low negative affect represent a state of serenity and calmness (Watson, Clark, & Tellegen, 1988). Measures of positive and negative affect are valued in EMA research not only because of their straightforward application to diary methods, but also because of their ability to indicate psychological well-being. For example, anxiety corresponds to high levels of negative affect, and depression corresponds to concurrently high levels of negative affect and low levels of positive affect (Crawford et al., 2004).

The first study in this dissertation examined how daily romantic relationship processes related to adolescents' daily negative affective states. The second study examined change trajectories in first-year students' negative and positive affect across the transition to college, and how these trajectories were related to daily involvement and conflict with parents and friends. It is hoped that these studies can lend insights into how interpersonal relationships can shape well-being, in both positive and negative directions, during developmentally challenging contexts which have the potential to act as turning points in adolescents' mental health trajectories moving forward.

Study 1: Romantic Relationships During Adolescence: Daily Romantic Processes Associated with Emotional Well-Being

During adolescence, romantic relationships become increasingly normative, such that over half of adolescents will have had at least one such relationship before the age of 18 (Carver, Joyner & Udry, 2003). These relationships are highly meaningful to adolescents and can even become more prominent than relationships with friends and family (Roth & Parker, 2001). They also often contribute to the development of sexuality and to the relationship skills that become critical for more committed relationships in adulthood, including marriage (Furman, Ho, & Low, 2008). Normative though they may be, adolescents' romantic relationships are also very challenging and represent a vulnerable emotional context for many youth, particularly in regards to mental health (Ha, Dishion, Overbeek, Burk, & Engles, 2014; Furman et al., 2008). In their seminal article, Joyner and Udry (2000) found that adolescents who became romantically involved, especially females, were at a greater risk of depression than adolescents who did not become romantically involved. Since then, scholars have sought to identify the *conditions* under which romantic relationship involvement is associated with diminished well-being. Contributing factors include early entry into romantic relationships (Doyle, Brendgen, Markiewics, & Kamkar, 2003), selection influences whereby adolescents from more conflicted and unstable family backgrounds or who are already depressed are more likely to seek out romantic relationships (Doyle et al., 2003; Davilla et al., 2009), and individual difference traits, such as attachment insecurities (Davila, Steinberg, Kachadourian, Cobb, & Fincham, 2004).

Another reason that romantic involvement is linked to diminished psychological well-being among adolescents has to do with the novelty of the relationship dynamics that are complex and emotionally intense. Adolescence is already a period of relative emotional volatility (Conolly, 2009), and adolescents' inexperience with these new dynamics can be challenging (Ha et al., 2014; Larson et al., 1999). Currently, however, little is known about the *day-to-day* dynamics of adolescent romance and how daily fluctuations in these processes relate to psychological well-being. Such a perspective is critical for the development of preventative interventions that seek to target maladaptive relational processes before they become more stabilized patterns of interaction. This study addresses this need by providing a first look into how day-to-day romantic relationship processes are related to adolescents' reports of their daily negative affect.

Romantic Relationship Processes and Well-Being

Theory on adolescent romantic involvement holds that romantic relationships are a uniquely challenging context for many adolescents (Davila, 2008; Connolly & McIsaac, 2011). On one hand, adolescents are relatively inexperienced with these relationships, and might therefore be less practiced in important relational skills (e.g., communication and problem solving with an intimate partner). Furthermore, many adolescents are still developing in their more advanced emotional cognition. A number of such competencies, such as the ability to differentiate blended emotions, conflicting emotions, and the situational sources of co-occurring emotions (Nannis & Cowan, 1987; Harter & Buddin, 1987; see also Larson et al., 1999), are only newly developed by the time individuals reach adolescence. As a result, most adolescents are expected to be inconsistent in their application of these skills in their day-to-day lives (Larson et al.,

1999). The implication is that daily romantic emotions and interactions, particularly those marked by negativity, can present a considerable coping challenge for many adolescents (Connolly & McIsaac, 2011). Empirical evidence supports this general assertion, linking romantic involvement to greater depressive symptoms (Joyner & Udry, 2000), and further showing that these links are particularly pronounced when coping resources are compromised (see Davila, 2008), such as greater co-rumination with friends (Starr & Davila, 2008), more preoccupied relational styles (Davila et al., 2004), and low emotional support from parents (Steinberg & Davila, 2008).

These unique challenges acknowledged, relationship experiences are likely not exclusively negative in their effect. For example, some scholars have suggested that romantic involvement can be developmentally advantageous by providing a venue in which adolescents can acquire fundamental relational competencies that will benefit them in future, more permanent relationships (Furman, Ho, & Low, 2008). Furthermore, and in regards to the present question of psychological well-being, adolescents report their romantic partners to be one of the most important sources of social support (Furman & Buhrmester, 1992). Therefore, those romantic emotions and interactions of more positive valence might represent the presence of an important coping resource and thereby promote psychological adjustment.

To date, however, there has been very little attention given to how adolescents' *daily* romantic experiences, positive and negative, are associated with their same-day well-being. For romantically involved adolescents, these regular and repeated interactions with romantic partners constitute the proximal processes that Bronfenbrenner and Morris (2006) posited were the fundamental drivers of development and change. In

this sense, daily romantic experiences have the potential to contribute to adolescents' longer-term trajectories of psychological well-being.

Romantic relationship emotions. Two significant dimensions of romantic relationship experience that might explain variability in adolescents' daily negative affect are romantic relationship emotions and interactions (Collins, 2003; Larson et al., 2003). Romantic emotions are those emotions that are specific to romantic experiences or relationships (Larson, Clore, & Wood, 2003). These emotions comprise a substantial portion of adolescents' daily emotional lives, who self-report that between 25-34% of their strong emotions are attributable to either real or fantasized romantic relationships (Wilson-Schockley, 1995), surpassing emotions related to peers, family, and school. Many of these emotions are negative in nature, and in addition to being strongly felt, are typically new for adolescents. For example, feelings of jealousy and doubtfulness are, for many, experienced for the first time in the context of a romantic relationship (Furman & Shoemaker, 2008). Adolescents are already more prone to greater emotional volatility than adults, and with still-maturing cognitive capabilities (Conolly, 2009), the novelty of these strong emotions may put them at risk for a number of challenges (Piaget, 1958). For example, Ha and colleagues (2014) found that adolescent couples' observed negative emotionality in the context of a conflict discussion was prospectively linked to greater depressive symptomology for both male and female partners. Relatedly, romantic breakups, and presumably the intense negative emotions involved, are among the strongest predictors of adolescent depression and suicide attempts (Monroe, Rohde, Seeley, & Lewinsohn, 1999; Brent et al., 1993). Even feelings of romantic jealousy can be powerful in their influence, predicting adolescents' greater likelihood of perpetrating

intimate partner violence (Johnson, Giordano, Manning, & Longmore, 2015). Given these links, it is reasonable to expect that negatively-valenced romantic emotions, such as jealousy and doubt, may impact adolescents' more immediate aversive emotionality, or daily negative affect.

Adolescents' relationships can also produce strong, pleasurable emotions, such as feeling in love. Indeed, this is much of the allure of adolescent romance. Some scholars have theorized that these positive emotions may be adaptive for adolescents by leading to healthy thought processes, particularly about the self. For example, feeling loved may contribute positively to feelings of self-worth and may even encourage adolescents to seek opportunities for personal growth (Larson et al., 1999). This supposition is largely based on early work suggesting that positive emotionality in general can encourage development (Collins & Gunnar, 1990). This heuristic value of positive emotions is assumed to translate to adolescent romantic relationships, though there is admittedly little empirical evidence addressing this supposition. Some evidence suggests that such a link may not be so straightforward, given the unique challenges of adolescent relationships. For example, Ha and colleagues (2014) provided evidence that for adolescents, positive emotionality can, in some circumstances, indicate maladaptive coping strategies, such as glossing over relationship problems, and thereby compromise psychological functioning. In short, little is known about how positive romantic emotions, such as love and commitment, may contribute to overall well-being, and in particular, daily negative affect.

Romantic interactions. Romantic interactions, or partners' shared communications and exchanges, may also contribute to daily negative affect. Romantic

relationships are characteristically unique from those with friends and family (Collins, 2009). Not only are these relationships less well-established, but they are also the first context in which adolescents must establish intimate and even passionate emotional connections with a romantic partner (Carver, 2003). As such, these relationships may require greater negotiation, communication, and problem solving skills, which are often still developing for adolescents (Furman & Schoemaker, 2007). One particular area of challenge is romantic conflict. Adolescents report having more conflict with their romantic partners than they do with their friends (Furman & Schoemaker, 2008), and these conflicts are highly stressful because breakups are likely (Ha, Overbeek, Cillessen, & Engles, 2012) and because coping with these conflicts are uniquely challenging (Ha et al., 2014).

Of course, not all romantic interactions are stressful, and some interactions may actually provide a buffer against daily negative affect. For example, despite the previously noted challenges, adolescents still feel very satisfied in their relationships and desire high levels of affiliation (i.e., time spent together) with their partners (Connolly, 2011). Indeed, romantic affiliation and the companionship that it brings is one of the primary motivators of adolescents' entry into romantic relationships (Connolly et al., 1999), and as partners age and become more intimate, they spend increasing amounts of time together (Furman & Buhrmester, 1992). Clearly, in the absence of tensions or conflicts, romantic relationships can be very satisfying. In fact, affiliation and companionship with a partner are so important to adolescents that the lack thereof is one of the primary reasons for break ups (Connolly & McIsaac, 2009). Taken together, high levels of romantic affiliation can, in the absence of tensions or conflicts, be very

satisfying and may even provide a buffer against adolescents' daily negative affect. Therefore, in this study, we examine how daily levels of conflict with one's partner, as well as daily levels of affiliation (indexed by the amount of time spent together), may impact daily negative affect.

Emotional Co-regulation in Close Relationships

One additional challenging dynamic that adolescent couples may experience is 'emotion co-regulation' in their daily negative affect. Also referred to as emotional crossover or transmission (Larson & Almeida, 1999; Butner, Diamond & Hicks, 2007), it is conceptually defined as the tendency for an individual to experience the emotional states of others nearby (Gurtman, Martin & Hintzman, 1990). This happens in a couple ways. Some evidence suggests that emotion is transmitted through shared environments and/or interactions. For example, conflictual interactions often create a shared negative emotional state among partners (Gottman, 1993). Other evidence supports a process known as 'emotion contagion' which is a more subtle, even unconscious acquisition of another person's emotional state (Hatfield, Cacioppo, & Rapson, 1994). This more subtle tendency to emotionally attune is proximity-dependent and is thought to have derived from the early attachment process in which infants learn to regulate their affective and physiological states by co-regulating with their caregiver. Emotion contagion is typically indicated in studies by the presence of co-varying affective states above and beyond their shared interactions that same day (e.g., Butner, Diamond, & Hicks, 2007; Saxbe & Repetti, 2010).

Whatever the mechanism, emotional co-regulation is considered to be especially salient in intimate relationships because of the heightened proximity and attention given

in these contexts (Hatfield et al., 1994). Several studies have documented this process among cohabiting and married couples. For example, a stressor experienced by one spouse predicts the psychological distress of the other (Bolger, DeLongis, Kessler, & Wethington, 1989). Schoebi (2008) showed that upon reuniting at the end of a typical work day, one spouses' anger and sadness positively predicts change in the other's anger and sadness. In another study, cohabiting couples showed affective synchrony in both their positive and negative affect throughout the course of a given day, indicated by their covarying affective states above and beyond their shared negative experiences (Butner et al., 2007).

It should be noted that emotional co-regulation is not in and of itself "good" or "bad." The outcome depends on a number of situational factors, such as the type of emotion, the target of the emotion, and duration of the co-regulation. For example, some studies have shown partners to covary in their positive affective states (Anderson, Keltner, & John, 2003). This possible variation acknowledged, research generally shows that covariation in negative affect is stronger than covariation of positive affect (Larson & Almeida, 1999), and that covariation in negative affect is typically associated with diminished psychological well-being and strained relationship outcomes (Saxbe & Repetti, 2010).

At this juncture, however, it is unclear whether the same processes of co-regulation documented among cohabiting and married couples are experienced by adolescent romantic couples, who usually do not live together and whose relationships are more transient in nature. Affective co-regulation is stronger for couples who spend more time together (Saxbe & Repetti, 2010), and so adolescent couples may not

experience a similar emotional synchrony. However, adolescents are known to give considerable time and attention to their relationships, even prioritizing them above other interpersonal relations, such as those with family and friends (Roth & Parker, 2001). This greater attention to romantic relationships could make emotional co-regulation likely. Although emotional-coregulation has not been examined among adolescents, a recent study showed that adolescent dating couples exhibited synchrony in their cortisol response (a physiological indicator of the stress response) to a stress task in a laboratory task (Ha et al., 2016). Therefore, one may reasonably expect that adolescent couples covary in their daily negative affective states. The present study takes a first step toward documenting the presence of emotional co-regulation in adolescents' daily negative affective states with those of their romantic partner.

Current Study

This study examined how adolescents' daily relationship experiences are associated with their same-day negative affective states. In particular, it examined how daily negative affect is related to adolescents' romantic emotions (positive and negative), relationship conflict, and relationship affiliation (time spent together). In addition, it examined evidence for the co-regulation of daily negative affect between adolescent romantic partners *above and beyond* these relationship processes, a phenomenon shown to exist among adult couples in more committed relationships and referred to as 'emotional contagion.' Based on the literature previously reviewed, this study addressed the following questions:

Research question 1. *Does daily negative affect vary as a function of adolescents' romantic emotions on that same day?* In particular, this study examined

emotions that pertain to the relationship that are both positive and negative in their valence. Given that romantic emotions are among the most salient sources of adolescents' strongly experienced emotions, it was hypothesized that they would predict daily negative affect ratings. It was expected that negative romantic emotions, such as feeling jealous and doubtful, would exacerbate negative affect. However, given the lack of prior evidence on positive romantic emotions (i.e., love, commitment), the hypothesis for its association with daily negative affect was exploratory in nature.

Research question 2. *Does daily negative affect vary as a function of adolescents' relationship conflicts and relationship affiliations on that same day?* Romantic conflicts can be especially challenging for adolescents, not only because breakups are more likely among adolescent couples, but because handling conflicts in these intimate contexts typically requires more sophisticated communication and problem solving skills. It was hypothesized that daily conflicts would predict greater levels of same-day negative affect ratings. However, in the absence of tensions, adolescents generally find a lot of meaning and support in their romantic relationships. Therefore, it was hypothesized that greater daily affiliation, or time spent with a partner, would help buffer against daily negative affect.

Research question 3. *Do adolescent dating partners covary in their same-day negative affect, above and beyond shared negative experiences?* Negative affective co-regulation is well-documented in adult couples, and although adolescent romantic relationships are more transitory arrangements, they come with heightened salience for many adolescents. Therefore, it was hypothesized that adolescents would also experience covariation in their day-to-day negative affect. Importantly, it was expected that this

covariation in negative affect will be found above and beyond negative shared experiences (i.e., relationship conflict, negative romantic emotion), evidencing an emotion contagion mechanism (Hatfield et al., 1994).

Method

Participants

Data were drawn from the ASPIRE (Adolescent School, Peer, and Interpersonal Relationships) study, a short-term longitudinal investigation of adolescents' romantic relationships (N = 99 couples). Inclusion criteria for recruitment were that adolescents had to be exclusively dating (there was no required relationship length), participate as a couple, and be between 14-17 years of age. We used different recruiting mechanisms, including social media advertisements (*n* = 82), two consenting schools (*n* = 27), and in-person at a local shopping mall (*n* = 2).

Although 99 couples participated in the study, 8 were same-sex couples and were omitted because the current analysis required that dyads be distinguishable on the basis of sex (Kenny, Kashy, & Cook, 2006). Another 3 couples were removed because they completed less than 20% of the diary surveys. Therefore, the present sample comprises of 88 heterosexual adolescent couples. These participants averaged 16.74 years (*SD* = 0.96; range = 14 to 17) and represented Latina/o (44%), Caucasian (42%), African-American (4%), Asian-American (4%), Pacific Islander (1%), and other (5%) ethnic backgrounds. Adolescents reported a median education level of "some college" for fathers and "some college" for mothers. Fifty-five percent (55%) of adolescents reported that their families had "just enough" or "not enough money to get by." Couples' relationship duration was varied, with 35% reported being together less than 6 months,

34% were together between 6 months and one year, and 31% had been dating for more than a year. All but one couple was living separately. During the course of the study, 13 couples broke up.

Procedure

Approval for the study was obtained from the University Institutional Review Board. Data were collected between July of 2014 and April of 2015. Once parental consent and adolescent assent were obtained, adolescents completed an online survey that assessed their interpersonal relationships (e.g., family, peer, romantic partner) and various adjustment indices. Then, participants were administered ecological momentary assessments (EMAs) twice weekly for the ensuing 12 weeks. Assessments were delivered electronically via text message every Sunday and Wednesday evening between 7pm and 12am and took approximately five minutes to complete. These surveys assessed daily interpersonal interactions, particularly in regards to their romantic relationships, as well as indices of adjustment (e.g., affective states). Research assistants monitored the progress of the EMAs and gave a phone call reminder to adolescents who had missed two consecutive EMA surveys. The average number of surveys completed by participants was 18.06 for a completion rate of 75.25%. Three to six weeks following the completion of the EMAs (4-6 months following the baseline survey) participants completed a follow-up survey assessing interpersonal relationships and adjustment.

Measures - EMA

Negative affect. Participants indicated their negative affective states using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). On the ecological momentary assessments, participants reported on their negative affect by

responding to four items indicating the degree to which they felt nervous, irritable, upset, and distressed. These items were rated on a 7-point likert-type scale (*1 = not at all, 7 = very much),* and were averaged for an overall negative affect score, with higher scores representing higher negative affect for that day. This measure displayed adequate reliability (α = .75).

Daily romantic emotions. Each assessment day, adolescents self-reported the degree to which they experienced various romantic emotions. The stem, "Within my relationship with my partner, I feel…" was followed by several emotions, each rated on a 7-point likert-type scale (1 = *Not at all,* 7 = *very much). Positive Romantic Emotionality* was assessed with a mean score of two emotions, feeling loved and feeling committed (*r* = .70). *Negative Romantic Emotionality* was assessed with a mean score of two emotions, feeling jealous and feeling doubtful (*r* = .48).

Daily relationship interactions. On each assessment, adolescents also reported on their romantic interactions with their partner. Specifically, they indicated their degree of *conflict* with their partner that day with a single item, "Today, how much conflict or tension was there between you and your partner?" Responses were scored on a 7-point scale (*1 = None, 7 = A lot).* Adolescents also indicated the amount of *time spent* with their partner that day in hours.

Measures – Baseline Controls

At the baseline assessment, adolescents reported on the length of their relationship in months with the item, "how long have you been together with your current romantic partner?" Demographic controls included adolescents' sex (0 = *female,* 1 = *male*), a

dummy code for ethnicity (1 = *white*, 0 = *ethnic minority*), and socioeconomic status, indicated by a proxy measure of parents' average education level.

Analytic Strategy

Analyses were conducted in *SAS* 9.4 using PROC MIXED. As these data are nested (observations within individuals and individuals within couples), a multilevel modeling framework was used, which allowed for the estimation of within- and between-person effects simultaneously. Given that the time lag of the EMA assessments was three to four days, it was not reasonable to expect prospective relations among daily relationship processes and negative affect (Larson & Almeida, 1999). Therefore, a concurrent, two-intercept multilevel model was estimated to examine associations between self-reported daily relationship processes and same-day negative affect, as well as covariation in couples' same-day negative affect.

To specify the two-intercept model, male and female dummy variables were used to invoke parallel models for males and females, such that the Level 1 (within-person) model is expressed as:

Males: $NA_{Mij} = \beta_{00Mi} + \beta_{1Mi} X11_{ij} + \beta_{2Mi} X12_{ij} + \beta_{3Mi} X13_{ij} + \beta_{4Mi} X14_{ij} + \beta_{5Mi} X15_{ij} + e_{Mij}$

Females: $NA_{Fij} = \beta_{00Fi} + \beta_{1Fi} X21_{ij} + \beta_{2Fi} X22_{ij} + \beta_{3Fi} X23_{ij} + \beta_{4Fi} X24_{ij} + \beta_{5Fi} X25_{ij} + e_{Fij}$

Interpreted, a negative affect rating on a particular day (*j*) of an adolescent (*i*) is modeled as a function of within-person factors and a residual, e_{ij}. The parameters β_{00Mi} and β_{00Fi} represent the intercept for males and females, respectively (i.e., a participant's average daily negative affect when all other variables are zero). The parameters β_{1Mi}

through β_{4Mi} (β_{1Fi} through β_{4Fi} for females) are regression coefficients of the population slopes predicting an adolescent's negative affect on a particular day from the same-day predictor variables:

X11/X21: negative romantic emotionality on day *j* for adolescent *i.*

X12/X22: positive romantic emotionality on day *j* for adolescent *i.*

X13/X23: degree of conflict with partner on day *j* for adolescent *i.*

X14/X24: time spent together on day *j* for adolescent *i*.

The parameter β_{5Mi} (β_{5Fi} for females) is the regression coefficient of a within-person covariate survey number *i* for adolescent *j*, used to control for growth trends.

The level 2 (between-person) equations were specified as follows:

$$\beta_{00Mi} = \gamma_{00M} + \gamma_{01M}X16_i + \gamma_{02M}X17_i + \gamma_{03M}X18_i + u_{0Mi},$$

$$\beta_{00Fi} = \gamma_{00F} + \gamma_{01F}X16_i + \gamma_{02F}X17_i + \gamma_{03F}X18_i + u_{0Fi},$$

The parameters γ_{01M} through γ_{03F} (γ_{01M} through γ_{01F} for females) are level-2 regression coefficients of the population slopes predicting the intercept of adolescent *i* from the between-person predictor variables:

X16/X26: the reported relationship length by an adolescent *i.*

X17/X27: the minority status of an adolescent *i.*

X18/X28: the parents' average education of an adolescent *i.*

Then, to examine evidence for negative affective co-regulation (i.e., covariation above and beyond these predictors), the residual for daily negative affect, e_{ij}, was examined. This residual represents the remaining, unexplained variance in an adolescent's daily negative affect after accounting for all predictors and controls and is assumed to be normally distributed with a standardized mean of zero and a variance of σ^2.

Because there are two estimated equations per couple (i.e., a male equation and a female equation), estimates for the within couple (across-partner) variances and covariances of the residual can be produced:

$$\begin{bmatrix} \sigma^2_{e_{Mti}} & \\ \sigma_{e_{Mti}e_{Fti}} & \sigma^2_{e_{Fti}} \end{bmatrix}$$

Negative affective co-regulation is indicated by the cross-partner residual covariance, $\sigma_{eMti,eFti,}$ as it represents the degree to which negative affect on a given day covaries between partners above and beyond the predictors.

Results

Data Screening

Missing data patterns were analyzed for the key study variables, revealing that 23% of cases across all diary surveys were missing values for negative affect. Missing values on all other EMA variables were missing for 24% - 30% of cases. Little's MCAR test was marginally significant, χ^2 (21) = 32.19, p = .06. To be conservative, we rejected the null hypothesis that the missing values are missing completely at random (MCAR). To examine if there were variables within the data set that might predict missingness, a dummy code was created for missingness and used in logistic regression and chi square analyses as a dependent variable. Missingness on the EMA variables was more likely for ethnic-minority adolescents, for males, and for those from lower socioeconomic backgrounds. As such, these demographic variables were used as auxiliary variables to assist in the estimation of the missing data via multiple imputation. Using PROC MI in SAS, 10 statistically independent data sets were imputed. Then, the multilevel models

were estimated across all data sets and pooled to produce final parameter estimates (Enders, 2010).

Descriptive Statistics

Descriptive statistics were computed for the key variables and are presented in Table 1. For the EMA variables, the cross-time averages were used for descriptive analysis. Overall, adolescents displayed low average daily levels of negative affect. They also reported low average daily levels of negative romantic emotionality and relationship conflict, moderate levels of time spent together, and high levels of positive romantic emotionality. Mean differences were examined by sex and showed that females reported greater levels of average daily negative affect than males $t(176) = 2.69$, $p = .008$, with a moderate standardized mean difference (i.e., effect size), $d = .40$. Correlations were also examined among the study variables. For males and females alike, adolescents' average daily negative affect was significantly associated with greater average daily levels of negative romantic emotionality and higher average daily conflict. Average daily levels of positive romantic emotionality were associated with lower levels of negative affect for females (and marginally for males), and average time spent together was marginally associated with lower levels of negative affect for females.

Daily Relationship Processes and Negative Affect

The first research question regarding relations between adolescents' daily romantic relationship processes and their same-day negative affect scores was examined using a multilevel, two-intercept model with negative affect as the dependent variable (details of the model specification previously described). All available diary surveys were used for analyses (4,224 observations). If couples broke up during the study (n =

13), their data were retained until the date of the break-up, after which they contributed no additional diary surveys to the analyses. In the model, time-invariant (between-person) covariates were entered for relationship duration, adolescents' minority status, and parent education. A time-varying covariate was also entered for survey number to control for within-person growth trends. Then, daily relationship processes were entered as time-varying (within-person) predictors of negative affect, which included negative and positive romantic emotionality, the degree of conflict with the partner, and the amount of time spent with the partner. These predictors were all cluster-mean centered such that they represented effects relative to individuals' own cross-time averages. Parallel models for males and females were estimated simultaneously, meaning that parameter estimates were produced for males and females separately while correcting for the non-independence of the data emerging at all levels (daily observations within individuals and individuals within dyads). Finally, because some of the variables were skewed, including the outcome variable negative affect (skew = 1.31), the two-intercept model was re-estimated using appropriate variable transformations to ensure that the skewness of the variable distributions did not bias the initial results. All results remained unchanged, but because of the difficulty interpreting results on transformed variables, results are reported for the initial models without variable transformations.

Table 2 displays the results of the final model. Effects of the between-person controls were produced for adolescents' relationship length, ethnicity, and parent education, and multilevel effect sizes were obtained for significant effects. The dummy code for ethnicity (white as the referent group) was significant and positive in the prediction of negative affect, suggesting that white adolescents exhibited greater daily

levels of negative affect on average than ethnic-minority adolescents, respectively. In particular, being white corresponded to a 0.42 unit increase in males' and a 0.38 unit increase in females' *average* daily negative affect. A multilevel effect size, the proportional reduction in variance (PRV; Raudenbush & Byrk, 2002) was calculated for significant effects. The PRV is a local effect size measure obtained by calculating the percent reduction in the residual variance by the addition of a particular variable or set of variables into the final model. In this way, it is comparable to the change in R^2 statistic that is frequently used in a hierarchical multiple regression analysis (Peugh, 2010). In the case of the level-2 equation, the PRV estimates the percent decrease in males' and females' *average*, or between person, residual for negative affect by the addition of ethnicity into the model for males (PRV = 8%) and females (PRV = 7%). In other words, adding minority status as a predictor of negative affect reduced the between-person residual variance in negative affect by 8% for females and 7% for males. Parent education and relationship length were not significant in the prediction of average daily negative affect scores. A single within-person control was also examined for time (indicated by survey number) to account for growth trends. This control was not significant for males or females, indicating that there is no evidence for within-person growth in negative affect across time.

Estimates were then produced for the within-person daily relationship processes predicting daily negative affect. For each predictor that was significant, its proportion reduction of variance (PRV) of the *within*-person residual for negative affect was obtained. For both males and females, daily negative romantic emotions were predictive of greater negative affect, suggesting that on days in which adolescents experienced

greater levels of daily negative romantic emotions than their cross-time average, they reported higher levels of general negative affect. Specifically, a one unit increase in daily negative romantic emotions corresponded with a 0.26 unit increase in males' and 0.24 unit increase in females' same day negative affect. The addition of negative romantic emotionality into the model reduced the within-person residual by 2% for males and 3% for females. Daily positive romantic emotions were unrelated to daily negative affect for males and females.

Daily conflict predicted greater levels of negative affect, meaning that on days in which an adolescent reported greater relationship conflict than his/her cross-time average, s/he also reported greater levels of negative affect that same day. This effect was significant for males and females, such that a one unit increase in relationship conflict corresponded to a .23 unit increase in males' (PRV = 8%) and .20 unit increase in females' (PRV = 6%) same day negative affect. Finally, the amount of time an adolescent spends with his/her partner on a given day also significantly and *inversely* predicted negative affect for males and females, meaning that on days in which adolescents spent more time with their romantic partner than their cross-time average, they reported lower levels of negative affect than their own average. Specifically, a one unit increase in time spent together corresponded to a .06 unit decrease in males' (PRV = 1%) and .04 unit decrease in females' (PRV = 1%) same-day negative affect.

Daily Transmission of Negative Affect among Couples

Finally, the model was examined for evidence of negative affective co-regulation in adolescent couples, and specifically an emotion contagion mechanism. According to the literature, co-regulation is indicated by covariance in negative affective states, and an

emotion contagion mechanism is evidenced when co-regulation persists above and beyond shared negative experiences, herein indicated by relationship conflict and negative romantic emotionality. As the previous two-intercept model produced estimates of these effects, it was then possible to use the same model to provide this test of covariation between adolescent partners' daily negative affect above and beyond these effects. Specifically, this effect is represented by the residual covariance among couples' daily negative affect scores after the predictors are accounted for in the model. Results are displayed in Table 2 and showed this covariance to be significant and positive, suggesting that above and beyond all other predictors in the model, including conflict and negative romantic emotionality, greater negative affect in one partner on a given day corresponded with greater negative affect in the other partner on that same day.

Discussion

Romantic relationship involvement, although normative during adolescence, has been linked to diminished psychological well-being during this developmental period (Davila et al., 2004; Joyner & Udry, 2000). The challenging nature of these relationships are attributed, in part, to the novelty of romantic relationships and adolescents' still-maturing socio-emotional capacities (Davila, 2008; Larson et al., 1999). To date, however, few studies have examined the *daily* experiences of adolescent romantic relationships, and in particular whether these experiences explain variability in psychological well-being. Such an investigation is warranted; because of the regularity with which romantic partners interact, these daily romantic experiences constitute the 'proximal processes' of a potentially vulnerable context that can impact longer-term trajectories of psychological well-being (Elder, 1998). The current study addressed this

need by investigating whether adolescent dating couples' daily romantic experiences predicted fluctuations in their same-day negative affect ratings. Findings indicated that negatively valenced romantic emotions and greater conflict predicted higher same-day negative affect, whereas greater affiliation predicted lower levels of negative affect. Results also evidenced the presence of complex, yet subtle emotional co-regulation (i.e., emotion contagion) processes. Insights from this study indicate adolescents' romantic relationships might be an important venue for prevention efforts that seek to promote adolescent mental health.

Daily Romantic Experiences and Negative Affect

The first goal of this study was to examine whether adolescents' daily romantic experiences, specifically their romantic emotions and their interactions with their partners, were associated with their same-day negative affect ratings. It was expected that negative romantic emotions and perceived conflict would predict greater negative affect, whereas greater affiliation would predict less negative affect. Predictions were less clear regarding positive romantic emotions, and so hypotheses here were exploratory. Overall, these hypotheses were supported. Specifically, when adolescents experienced greater amounts of negative romantic emotions (i.e., jealousy and doubt) and perceived more conflict with their romantic partners, they also reported higher same-day negative affect. On the other hand, greater affiliation (i.e., spending more time together) predicted less negative affect. Finally, positive romantic emotions (i.e., feeling loved and committed) were unrelated to negative affect.

Romantic relationships are inherently challenging and can present major coping challenges for adolescents (Larson et al., 1999). Because certain advanced cognitive-

emotional competencies are still emerging during adolescence, adolescents may be inconsistent in their application of these skills from day-to-day (Larson et al., 1999; Piaget, 1958). Perhaps for this reason, adolescents report considerably greater daily emotional volatility than adults (Czikszentmihalyi & Larson, 1984; Arnett, 1999). Romantic emotions, in particular, constitute a significant portion of adolescents' daily emotional experiences (Wilson-Shockley, 1995) and are very strongly felt by adolescents (Larson et al., 1999). As a result, many adolescents might struggle to cope with intense, negative romantic emotions, such as jealousy and doubt, leaving them vulnerable to fluctuations in their more general daily negative emotionality. These same principles also likely apply to conflicts and disagreements. Conflicts are a relatively normative feature of romantic relationships and even have potential for relationship enhancement when handled with appropriate strategies (McIsaac et al., 2008; Shulman, Tuval-Mashiach, Levran, & Anbar, 2006). However, the existing literature suggests that such competencies do not come easily to adolescents; conflicts are more often challenging than not (Laurent, Kim, & Capaldi, 2009). For example, observational work has demonstrated that adolescents can struggle so much in the midst of romantic conflict that they often resort to coping strategies (e.g., upregulation, deflecting) that exacerbate relationship problems (Ha et al., 2014). The present findings might also represent the self-regulatory challenge of experiencing conflicts, which predicted aversive emotionality on same-day assessments.

Interestingly, positive romantic emotions, such as feeling loved or committed, were not predictive of adolescents' daily negative affective states. One reason for this might be that positive emotions are typically not as powerfully-felt as negative emotions,

meaning that negative emotions are more likely than positive emotions to "spillover" into other emotional domains (Larson & Almeida, 1999). Therefore, feelings of romantic love and commitment may be less powerful in their influence over fluctuations in mood states. Another possibility for this null finding might have to do with the nature of negative affect itself. Negative affect represents aversive emotionality, and its absence reflects a state of calm (Watson et al., 1988). The exciting feelings of being in love are positive, *high* arousal emotions (Larson et al., 1999), and as such, may influence categorically different mood states, such as positive affect, which we did not measure in this study.

Thus, this null finding should be interpreted cautiously as it does not rule out the existence of potential benefits of these positive romantic emotions. Indeed, experiencing these positive emotions are one of the primary drivers of adolescents becoming romantically involved (Connolly et al., 1999). These emotions might be an important source of emotional support, which is a known buffer against the effects of stress (e.g., Auerbach, Bigda-Peyton, Eberhart, Webb, & Ho, 2011). Indeed, some evidence emerged for such a protective effect, as spending time together was related to lower daily levels of negative affect. Such findings give reason to believe that, despite the challenges inherent to romantic relationships, there might well be benefits. Future research is needed to examine how these and other relevant relationship emotions and experiences are related to other domains of adolescents' emotional experience and how they may be developmentally supportive.

A final notable pattern was the similarity in findings between the sexes: all the effects detected were significant for males and females alike and nearly identical in size,

although we did not formally test if these effects were statistically different (between the sexes). Interpreted, although the females in our study did report higher average daily levels of negative affect than the males, the negative affective states of both females and males were predicted by the *same* daily experiences of romantic emotionality, conflict, and affiliation. Such a pattern is important to note because some previous studies have reported girls to be more negatively affected by romantic relationship involvement than boys (e.g., Joyner & Udry, 2000), resulting in a multitude of hypotheses about sex-based mechanisms of these effects. The identification of said mechanisms can be valuable, for example, in illuminating the differential socialization experiences of boys and girls (Maccoby, 1990), particularly around topics of dating and sexuality (Perriloux, Fleischman, & Buss, 2008). However, that this study, with its specific design and measures, found no such differences, reminds us to approach the topic of these sex differences with care and precision. Overstating such differences has the potential to draw more attention and resources to addressing the challenges of one group over the other, even though both males and females struggled fairly equally to cope with their relationship challenges, as presently evidenced. Identifying the configuration of sex differences (and the meaningful absence thereof) across a number of romantic relationship domains and outcomes is a valuable direction for future research.

Emotion 'Contagion'

The second goal of this study was to examine the presence of emotional co-regulation in adolescent couples, and particularly evidence for emotional contagion. Findings provided support for emotional contagion, as adolescent partners covaried in their negative affect ratings above and beyond the effects of negative romantic emotions

and conflict. The transmission of negative emotion is documented among adult couples, who live together and spend significant amounts of time together (e.g., Butner et al., 2007). This is the first study (to my knowledge) that documents such an association in the developmental period of adolescence. This may seem striking given that adolescents do not live together or spend as much time interacting as adult couples. However, adolescents' relationships are highly meaningful, and so adolescents may keenly attend to the emotional dynamics of their relationships, making emotional attunement, or co-regulation, more likely. Furthermore, because adolescents are generally less practiced and therefore, less skilled in coping with the emotionally challenging experiences inherent to romantic interactions, they may be particularly vulnerable to acquiring the negative emotional states of a romantic partner.

Of course, it is probable that not all adolescents are vulnerable to negative affective co-regulation, as this is the case among adult couples. An important aim for future studies is to document those characteristics that make some adolescents more vulnerable to acquiring the negative emotional states of a partner. Among adults, negative emotional transmission is more likely to occur for individuals with diminished psychological and relationship assets, broadly defined (see Larson & Almeida, 1999, for a review). For example, attachment or interpersonal insecurities (Butner et al., 2007; Shoebi, 2008), depression and/or anxiety (Larson & Richards, 1994; Repetti & Wood, 1997), greater stress (Larson & Gillman, 1999), and a lack of perspective taking (Schoebi, 2008), all increase the likelihood that an individual will acquire or transmit negative emotions to their partners and family members. Such characteristics are a

promising starting-point for research on negative affective transmission among adolescents.

Implications

This study adds to a growing literature evidencing the inherent challenges of romantic involvement for adolescents. A number of studies have documented associations between romantic involvement and mental health challenges (Davila, 2008). This study advances the literature by showing that these challenges persist at a daily level and are detectable with more precise, within-person research designs. This is significant because adolescents have regular interactions with their romantic partners, and as such, these interactions contribute in an important way to the proximal processes that Bronfenbrenner and Morris (2006) posited were the fundamental drivers of development and change. Implied is that these experiences have the potential to impact adolescents' more long-term mental health trajectories and as such, perhaps even distal mental health outcomes across the lifespan. Therefore, prevention efforts that aim to promote mental health among adolescents may find added success by addressing these inherent romantic relationship challenges. Adolescents are often hesitant to disclose romantic related information with their parents (Rote & Smetana, 2015), and so many parents and helping professionals may feel lacking in information about how to help adolescents navigate the inherent challenges of romantic involvement. With this study, prevention and anticipatory guidance efforts can more pointedly instruct parents about the challenges that daily romantic experiences can present (i.e., conflict, negative romantic emotions, transmission of negative affect). These efforts can position parents to establish effective and informed dialogues with their adolescent children about romantic involvement, and

to engineer environments that can provide adequate resources to enable adolescents' optimal coping when these challenges arise.

Limitations

This study is not without limitations. Associations between relationship processes and negative affect were concurrent, same-day associations, and as such they cannot confirm the directionality of these relations that is herein assumed. It is possible that experiencing negative affect on a given day can lead to more negative relationship processes, or even color perceptions such that adolescents are more likely to report negative romantic emotions and perceived conflict. Future work should use assessments lagged at appropriate intervals to tease apart these directional influences. Another limitation is that this study only assesses one underlying dimension of mood: negative affect. Negative affect is a fundamental dimension of mood and can effectively indicate more serious mental health challenges, such as depression and anxiety (Crawford & Henry, 2004; Watson et al., 1988). However, it is specific to high-arousal, aversive emotionality (e.g., anger, distress). Not examined in the study were the relations among romantic relationship processes and positive affect, a high arousal, energetic sense of engagement and pleasure. Therefore, while the study is sensitizing in terms of the negative correlates of romantic involvement, it is *insensitive* to the various and potential positive qualities that we were unable to detect with our measure of negative affect alone. Finally, the sample studied was primarily heterosexual for the purposes of the chosen design and analysis. These findings may or may not adequately apply to sexual minority adolescents, whose romantic experiences and challenges are in many ways unique from heterosexual adolescents given the various stigmas surrounding same-sex relationships

(Diamond, Savin-Williams, & Dubé, 1999; Udry & Chantala, 2002; Russel, Franz, & Driscoll, 2001).

Conclusion

Prior work links adolescents' romantic relationship involvement to compromised mental health outcomes (Joyner & Udry, 2000). We build on this work by identifying specific, daily relationship processes that may account for part of this association. Results provide evidence that both overt (e.g., perceived conflict) and implicit (e.g., emotional co-regulation) daily relationship processes portend aversive emotional daily experiences (i.e., negative affect). Therefore, although romantic relationships may serve important developmental purposes (e.g., Furman et al., 2008), parents and educators might be benefitted by acknowledging the various challenges that romantic involvement can present. Further, given that most adolescents will have experience with romantic relationships, the present findings warrant prevention efforts that aim to educate and support adolescents' healthy romantic involvement.

Paper #2: The Transition to College and Adolescent Psychological Well-Being: Developmental Trajectories and the Role of Daily Interactions with Parents and Friends

The confluence of major developmental and ecological changes can produce turning points for adolescents' developmental trajectories. In particular, when ecological and developmental shifts coincide, the "match" between an individual's social environment and his/her developmental needs may be altered (Eccles & Midgley, 1993; Seidman & French, 2004). When social contexts become developmentally regressive, adolescents are at risk for experiencing difficulties, but when social contexts complement development needs, adolescents are likely to thrive (Guttman & Eccles, 2007). One such period in the life course of many young adults is the college transition. At the same time as adolescents experience developmental milestones progressing into adulthood, they also experience an abrupt change in their social environments (e.g., changes in social networks, living arrangements, and/or academic routines). As such, many scholars now recognize the transition to college as a developmentally sensitive period with potentially long-lasting implications for well-being. For this reason, understanding students' trajectories of well-being as they make this transition to college is an important undertaking.

It is also important to investigate how interpersonal relationships can bolster or hinder well-being across this transition. Elder's (1998) notion of 'linked lives' suggests that an individual's development is necessarily connected to and shaped by the social ties s/he has with others. Indeed, the quality of one's interpersonal relationships, particularly those with family and friends, serves as a key emotional resource that predicts well-being

across the college transition (Mounts Valentiner, Anderson, & Boswell, 2006; Moreira & Telzer, 2015). However, little is known about how the *day-to-day* dynamics of interpersonal relationships are related to well-being during this transition period. It is these day-to-day interactions that Bronfenbrenner and Morris (2006) identified as the 'proximal processes' (p. 795) driving socialization and the ensuing development of the individual. Thus, a greater understanding of these day-to-day social processes may lend insights into prevention programs that seek to promote well-being during this transition.

The current study has two overarching goals. The first is to examine intra-individual change trajectories of college students' emotional well-being (indexed as positive and negative affect) across their first semester of college. The second is to examine how daily involvement and conflict with parents and friends predicts variability in students' affective states and trajectories during this same period. To answer these questions, this study uses an innovative ecological momentary assessment (EMA) design, also known as a daily diary method, which comprises repeated, day-to-day assessments of events close to their occurrence (Iida et al., 2012). Such designs are ideally suited to examine developmental processes during brief transition periods, given their ability to detect micro-level, within-person processes, as well as their added ecological validity (Bolger, 1989; Laurenceau & Bolger, 2005).

Affective Trajectories across the Transition to College

The first semester of college is a potentially sensitive period for the development of psychological and emotional challenges. Rates of clinical-level internalizing symptoms, such as anxiety and depression, are remarkably high among college students. For example, 30% of college students report being too depressed to function in the last 12

months, and 13% are clinically diagnosed with a depressive disorder (American College Health Association, 2013). A handful of studies have examined changes in pre- and post-transition levels of well-being and adjustment. Almost all of these show that adolescents report greater average levels of depression (Bewick, Koutsopoulou, Miles, Slaa, & Barkham, 2010; Cooke, Bewick, Barkham, Bradley, & Audin, 2006), stress (Brissette, Scheier, & Carver, 2002), loneliness (Larose & Boivin, 1998), and anxiety (Doane, Gress-Smith, & Breitenstein, 2015; Tao et al., 2000) following the first semester or two of college as compared to pre-college levels. Therefore, although many incoming students eagerly anticipate the new personal, academic, and social opportunities that await them, the college experience often proves to be more challenging than anticipated, evoking major changes in their social networks, their living arrangements, and their academic routines (Pancer, Hunsberger, Pratt, & Alisant, 2000; Gall et al., 2000). As a result, this transition might mark a period of decline in students' well-being.

These findings have helped sensitize researchers and counselors to the challenges experienced by many emerging adults as they transition to college. However, because these studies predominantly rely on two-occasion data (e.g., Alfeld-Liro & Sigelman, 1998; Andrews & Wilding, 2004; Larose & Boivin, 1999; Pritchard, Wilson & Yamnitz, 2007; Sax, Bryant & Gilmartin, 2004) and/or between-person designs, inferences about growth and change are limited in a few ways. First, these studies cannot rule out the degree to which observed change is driven by statistical artifacts, such as a regression to the mean or the confluence of measurement error with systematic change (Cronbach & Furby, 1970). Second, these designs preclude the estimation of *within-person change trajectories* in students' well-being, as well as what factors may predict variability in

these trajectories. Finally, studies cannot examine the pattern of this change, whether it is linear in nature, and whether the change happens abruptly at the transition event or relatively gradually across the first semester.

Across a number of studies, the assumption is often made that what affects mental health during this period is the abruptness of the transition event itself (i.e., changes in social networks, living arrangements, and their academic routines). However, previous design limitations (e.g., lag intervals are not small enough to directly test the effect of the transition event) have precluded the more precise modeling of these trajectories, meaning that this assumption continues to rest on thin empirical ground (e.g., Cooke, Bewick, Barkham, Bradley, & Audin, 2006; Gall, Evans, & Bellerose, 2000). Though the changes experienced at the college transition can indeed be relatively abrupt, many of these changes are anticipated by adolescents (Pancer et al., 2000), and some are even developmentally complementary (e.g., more independence from parents). It is alternatively possible that that declines in well-being are experienced gradually across the first semester (i.e., across months) as the semester grinds on and academic workloads accumulate (Pancer et al., 2000).

The present study addressed the aforementioned limitations by using an innovative daily diary method that facilitated the estimation of *within-person* change trajectories in well-being (indexed as positive and negative affect) across the first semester of college. It involved intensive repeated measures spanning the summer before college through the end of the first semester, also allowing for a formal comparison of different patterns of change and an examination of the influence of the precise transition event (i.e., the first day of classes) on these change patterns.

Quality of Interpersonal Relationships

In addition to understanding how first-year students' well-being changes across the college transition, identifying how adolescents' interpersonal relationships are related to affective states and trajectories is particularly helpful for the development of prevention strategies to promote first-year students' well-being. Ecological and life course perspectives emphasize the social-embeddedness of the individual when explaining development (Elder, 1998; Bronfenbrenner & Morris, 2006). Bronfenbrenner and Morris (2006) asserted that it is a person's direct and repeated interaction with a particular context, termed proximal processes, that are the driving mechanisms of individual development. Social relationships, particularly those with parents and friends, represent contexts with which most emerging adults have direct and repeated interaction. Not surprisingly then, research reports that the quality of these interactions are critical socio-emotional resources for first-year students (see Mattanah, Lopez, & Govern, 2011, for a review). When first-year students perceive high levels of support from and attachment to parents and friends, they report fewer depressive symptoms (Mounts et al., 2006; Moreira & Telzer, 2015), less loneliness (Wiseman, Mayseless, & Sharabany, 2006; Mounts et al., 2006), and higher levels of self-esteem (Lee, Dickson, Conley, & Holmbeck, 2014).

However, lacking is a more fine-grained understanding of how the more proximal processes that define these relationships (i.e., daily interactions) impact well-being across the college transition. This would seem particularly valuable in the context of major transitions, such as this, which evoke the re-negotiation of existing routines and social structures that have become abruptly de-stabilized (Seidman & French, 2004). The

college transition is one such period, and may produce meaningful day-to-day variability in adolescents' interactions with parents (e.g., greater distance from rules and oversight) and friends (e.g., more frequent interaction), as well as in their affective states.

Differential influences of parents and friends. It is likely that interactions with parents and friends exhibit distinct patterns of association with positive and negative affect during the transition to college, given the differing developmental purposes of these relationships at this time. In the current study, two key indicators of relationship quality were examined: daily involvement (indexed by *time spent* with and *satisfaction with time spent* with parents and friends) and daily conflict (indexed by *having arguments* with and *feeling pressured* by parents and friends).

Involvement. One of the key milestones for adolescents transitioning to emerging adulthood is to establish greater autonomy regarding family relationships (Silverberg & Gondoli, 1996). Of course, parental involvement remains important during this time (see Fingerman et al., 2012) but generally speaking, it is best balanced by both "separateness and connectedness" (Aquilino, 2006, p. 201), wherein parents relinquish considerable control over the adolescent to foster his/her increasing autonomy while also maintaining positive attachment bonds and offering support as needed (Aquilino, 2006; Padilla-Walker & Nelson, 2012). Although research on parental involvement during emerging adulthood is sparse (as most studies focus on earlier developmental periods), some evidence indicates its protective value regarding health behaviors. For example, when first-year students perceive their parents to be engaged in their lives, they are less likely to engage in risky behaviors, such as substance use (Padilla-Walker, Nelson, Madsen, & Barry, 2008). However, it is less clear how first-year students' affective states may vary

as a function of parental involvement, particularly at the day-to-day level. Given developmental needs for individuation, it may not be the amount of time spent with parents so much as the individual's perceived satisfaction with their time spent with parents that predicts well-being. In the current study, we examine both time spent with and satisfaction with time spent with as predictors of affective states.

In contrast to the greater individuation from parents across later adolescence (Tsai, Telzer, & Fuligni, 2013), peer relationships grow increasingly relevant and intimate (Brown & Larson, 2009; Furman & Buhrmester, 1992). For this reason, some have suggested that peers are more direct and proximal socializers during the college years (Mattanah et al., 2011). The power of peer socialization is often indicated in the literature by their influence toward risky behaviors, such as when peers are deviant (Dishion, Ha, Veronneau, 2012) or when there is negative peer pressure (Dishion & Dodge, 2005). However, there are many positive aspects of friendships that prove essential for the achievement of developmental milestones throughout adolescence and emerging adulthood, such as social skills and self-esteem (Collins & Steinberg, 2006). Indeed, friends' support during the college transition is found to be concurrently associated with more adaptive coping strategies (Tao et al., 2000), fewer internalizing symptoms (Pittman & Richmond, 2008), and greater academic adjustment (Friedlander, Reid, Shupak, & Cribbie, 2007). As such, greater involvement with friends during the transition to college might also have protective effects on emotional well-being. These relationships may help adolescents learn and develop the coping strategies (Dyson & Renk, 2006; Tao et al., 2000) and social skills (Collins & Steinberg, 2006) that can act as a buffer against the stresses of this transition.

Conflict. Conflict is an inevitable part of close relationships and can have important implications for individual well-being. Many studies have documented its potential for harm, pointing particularly to its tendency to induce negative affective responses and even internalizing disorders, such as depression (Laursen & Hafen, 2010). However, recent theory and research (Adams & Laursen, 2007; Laursen & Hafen, 2010) suggests that conflict is not always harmful, and can even be beneficial in certain circumstances. The key is to account for the variety of situational factors surrounding the conflict, including its frequency and its source (Laursen & Hafen, 2010; Laursen, 1994). For first-year college students, the influence of day-to-day conflict on affective states might depend on whether this conflict is with parents or friends, as well as the relative frequency with which it occurs.

Parents. Although the transition to college creates a context for greater independence, it also often creates new dependency needs, such as for finances and emotional support (Lowe, Dotterer, & Francisco, 2015; Padilla-Walker & Nelson, 2012). Thus, many families may initially struggle to achieve an optimal level of involvement that appropriately matches their adolescents' autonomy needs, which can lead to parental over-involvement, tension, and conflict. Such interactions are likely deleterious for first-year students as they would represent a developmental *mismatch*. Indeed, parental over-reach during emerging adulthood (indexed by constructs such as psychological control, 'helicopter parenting,' etc.) is concurrently linked to stunted identity development (Luyckx, Soenens, Vansteenkiste, Goossens, & Berzonsky, 2007), higher internalizing symptoms, lower self-worth (Nelson & Padilla-Walker, 2011), lower levels of academic engagement (Padilla-Walker & Nelson, 2012), and more problem behaviors (Urry,

Nelson, & Padilla-Walker, 2011). Therefore, it is likely that daily experiences of conflict with parents, indexed by arguments and felt-pressure, may have particularly negative effects on first-year students' emotional well-being.

Friends. Whereas relationships with parents are involuntary and hierarchical in nature, friendships are voluntary arrangements that are more or less egalitarian (De Goed, Branje, Delsing, & Meeus, 2009). As such, the principles governing conflict management among friends tend to emphasize mitigation strategies instead of coercive strategies (Adams & Laursen, 2001), meaning that these conflicts are most often resolved amicably (Burk & Laursen, 2005). In these contexts, conflicts are less likely to negatively impact individual well-being, and in some cases may even enhance mental health (Adams & Laursen, 2007; Laursen & Hafen, 2010). The exception to this, of course, is that persistent and frequent conflict with friends does predict psychological distress (Loeber et al., 1998; Adams & Laursen, 2007). Therefore, across the first semester of college, the cumulative effects of conflict (i.e., persistent daily conflict with and felt pressure from friends) may be stronger predictors of well-being than daily conflicts.

Current Study

This study examined (a) first year college students' developmental trajectories of positive and negative affect across the first semester of college, and (b) the degree to which students' daily interactions with parents and friends (i.e., involvement, conflict) explain meaningful variability in affective states and trajectories. Specifically, I examined the following research questions.

Research question 1. *How do first-year college students change in regards to their emotional well-being across the first semester of college?* I examined intra-individual change trajectories in students' positive and negative affect spanning the summer preceding college to the end of the first semester (mid-December). Prior research shows that students report greater levels of depression, anxiety, and stress (e.g., Doane et al., 2015) following their first semester or two of college. Therefore, I predicted that the students in the present sample would experience declining levels of positive affect and increasing levels of negative affect across the first semester of college. I also tested the growth models for discontinuous change patterns to examine whether this change would take place abruptly at the transition event or whether it would happen more gradually across the first semester. Given the lack of empirical data on this question, my predictions regarding discontinuous change in affective states were exploratory.

Research question 2. *Does daily involvement and conflict with parents and friends explain within-person and between-person variability in affective states and trajectories across the college transition?* Parents and friends are key socio-emotional resources for first-year college students (e.g., Mounts et al., 2006), though developmental considerations (e.g., greater individuation from parents and increased intimacy with friends) suggest that interactions with parents and friends might uniquely contribute to positive and negative affective states. For both involvement and conflict, I tested both state and trait levels of these interactions (e.g., daily conflict and average levels of conflict) as predictors of variability in students' daily affective states and growth trajectories. Based on the literature reviewed, I predicted that patterns of associations

would suggest that greater involvement with friends and parents generally would promote more adaptive affective states (i.e., greater positive affect, less negative affect), whereas, conflictual interactions with parents and friends would predict more negative emotionality (e.g., less positive affect, greater negative affect). Further, I anticipated seeing distinct patterns of association for parents and friends reflecting students' developmental needs during this period.

Method

Participants

Participants were drawn from Project ASSIST, which followed an incoming cohort of university freshmen at a large, state-sponsored university in the southwest United States. Incoming students were approached via pre-college workshops held at five local high schools and during nine student orientation seminars between April and July of 2014. Students were invited to participate and those that consented were given two participation options: 1) to complete a 45-60 minute survey in July 2014 (Time 1) and again in January of 2015 (Time 2), or 2) complete both surveys and provide electronic daily diary entries twice-weekly spanning the period between the two larger surveys. A total of 543 incoming students consented and voluntarily enrolled in the study (or had a parent consent if they were not yet 18 years old, n = 93), 426 of which participated (78.5%). Of these, 192 enrolled in the additional daily diary component of the study, of which 174 participated (91%) participated. *T*-tests and *chi-square* tests contrasting these individuals with those who did not participate in the EMAs showed that there were no significant differences in terms of age, $t(423) = -0.28$, $p = .86$; sex, $\chi^2(1) = 2.87$, $p = .10$; parent educational level, $t(418) = 0.99$, $p = .32$; ethnicity $\chi^2(1) = 0.31$, $p =$

.58; or mental health indicators prior to college (depression, t(419) = 0.78, p = .44; anxiety, t(409) = 0.79, p = .43; and loneliness, t(409) =0.07, p = .95).

The current sample used in the final analysis consists of 146 students who completed both the original survey and at least 11 (20%) of the diary surveys across the study period. Students' ages at the beginning of the study ranged from 17-19 years (M = 17.80, SD = .50). Participants were 61% female and represented Caucasian (54%), Latina/o (25.3%), African American (7.5%), Asian-American (8%), and other (5.2%) ethnic backgrounds. Most participants reported that their family had 'enough money to get by' or more (93.7%).

Procedure

Approval for the study was obtained from the university Institutional Review Board. Once consent was obtained from all participating students and/or caregivers, the study began with participants each filling out a baseline questionnaire that assessed indices of physical, mental and emotional health and family and peer relationships. These questionnaires were administered electronically via an online survey software (Qualtrics), allowing participants to take these surveys in the privacy of their own home. After completing the baseline survey, participants were sent electronic diary reports via text message every Sunday and Wednesday evening for 24 weeks (n = 55 possible entries, M = 29, SD = 13.78, range = 6 to 55). Administration of these surveys began in the first week of July 2014 and ended the first week of January 2015 so that they spanned the transition to college and the entire first semester. These surveys were short (less than 10 minutes), and asked students to report on daily mood states, as well as daily interactions with friends, parents, and romantic partners (although data for romantic

partners are not used in the present study). Participants were compensated $20 USD for the baseline survey and $2 USD for each completed electronic momentary assessment.

Measures - EMA

Negative and positive affect. Participants indicated their daily affective states using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Participants were presented eight items, each representing a particular mood state and indicated the degree to which they felt that way on that same day. Items were rated on a 7 point likert scale (1 = not at all, 7 = very much). Five items represented negative affective states (e.g., nervous, irritable, upset) and were averaged for an *overall negative affect* score; higher scores represented greater negative affect. This measure displayed adequate internal consistency, α = .82. Three items represented positive affective states (e.g., attentive, excited, and happy) and were averaged for an overall *positive affect* score, with higher scores representing greater positive affect on that day. This measure displayed adequate reliability, α = .73.

Perceived involvement. Participants indicated the amount of time, in hours, they spent with their parents and friends, either in-person, by phone, or other means. Participants also indicated personal satisfaction with the amount of time spent with parents and friends. This latter item was rated on a 7 point likert scale (*1 = very dissatisfied, 7 = very satisfied).*

Perceived conflict. Participants indicated the presence of interpersonal conflict from parents and friends with two items, designed specifically for this study. Each assessment day, participants reported on whether they "experienced arguments or problems" with their parents and friends, and whether they "felt pressured by" parents or

friends. Both items were rated dichotomously (*1 = experienced arguments/felt pressure today, 0 = experienced no arguments/felt no pressure today*).

Measures – Baseline Controls

Depressive Symptoms. At the baseline assessment (July 2015), students' reported on their depressive symptoms using the Center for Epidemiologic Studies Depression scale (CES-D; Orme, Reis, & Herz, 1986)). This measure consists of 20 items designed to tap symptoms of depression, such as loneliness, guilt, and suicide ideation (e.g., "During the past week, I thought my life had been a failure" and "During the past week, I felt lonely"). These items were rated on a 5 point likert-type scale (*1 = Never, 5 = All of the time).* Items were averaged for an overall score with higher scores representing higher levels of depressive symptoms. This scale displayed adequate internal consistency, α = .90.

Demographic Information. Information on demographics and socioeconomic status was obtained in the baseline assessment. Participants reported on their age (in years), their gender (*0 = female, 1 = male*), and their ethnicity (*White/Caucasian, African-American, Hispanic/Latino, Asian, Native American, Pacific Islander, other*). For analyses, ethnicity was dummy coded with "White" as the referent group. Parental education level was used as a proxy indicator for socioeconomic status, asking students to indicate their parents' highest degree (*Less than High School, High School/GED, some college, 2-year college degree, 4-year college degree, Masters degree, Doctoral or Professional degree*).

Analytic Strategy

Growth models. First, two multi-level growth models were estimated to examine first-year students' change in positive affect and negative affect across the first-semester of college, respectively. This analytic approach was used because it allows for the estimation of between-person differences in intra-individual change trajectories. The multilevel modeling framework accounts for the nested nature of the data, controlling for between-person traits and characteristics that could obscure detection of intra-individual change processes. All available data points were used leading up to the transition and through mid-December of the students' first semester of college (n = 49 surveys; 5,146 data points).

The multilevel equations for the positive affect growth models are presented:

Level-1 Model:

$$PA_{ij} = \beta_{0i} + \beta_{1i}(day) + \beta_{2i}(day^2) + \beta_{3i}(day^3) + R_{ti}$$

Level-2 Model:

$$\beta_{0i} = \gamma_{00} + U_{0i}$$

$$\beta_{1i} = \gamma_{10} + U_{1i}$$

In these models, time polynomials were specified as predictors of positive or negative affect. Time was indicated by the day of assessment and was centered at the college transition (i.e., the first of classes) such that the intercept represented average daily levels of positive or negative affect at the transition point. To achieve the best fitting growth trajectories, a model-building approach was taken in which increasingly complex models were specified and compared on the basis of model fit. A model was retained if it showed better fit than a previous, more parsimonious model. This process

started with the estimation of a no-growth model in which an intercept, but no slope, was estimated. Then, a model was specified with a linear slope and intercept estimated. Then, a model was specified with an additional quadratic term, and finally a model with a cubic term. This stepwise process ceases when a model fails to produce better fit to the data than a previous model. Gender, ethnicity, SES, and depressive symptoms were controlled for on all fixed and random effects.

Discontinuous change. Once the appropriate growth model was chosen, it was then tested for discontinuous change patterns resulting from the abrupt transition to college. For example, if a linear model was the best fitting model for negative affect, the equation with discontinuous change parameters would be modeled as follows:

Level-1 Model:

$$NA_{ij} = \beta_{0i} + \beta_{1i}(\text{day}) + \beta_{2i}(\text{transition}) + \beta_{3i}(\text{transition} * \text{day}) + R_{ti}$$

Level-2 Model:

$$\beta_{0i} = \gamma_{00} + U_{0i}$$

$$\beta_{1i} = \gamma_{10} + U_{1i}$$

In addition to estimating an intercept and linear slope, a dummy variable, *transition event* (0 = *all observations before transition*, 1 = *all observations after transition*) was used to model sustained differences in negative affect immediately following the transition (Grimm et al., 2015). In addition, an interaction term between *transition event* and the linear slope was entered to examine if the rate of change in negative affect differed pre- and post-transition (i.e., a spline model; Singer & Willet, 2003).

Within- and between-person predictors. Finally, the influences of daily involvement and conflict with parents and friends on affective states were examined. Within- (state) and between-person (trait) predictors representing each of these constructs were added at the appropriate levels of the growth models:

Level-1 Model:

$$PA_{ij} = \beta_{0i} + \beta_{1i}(day) + \beta_{2i}(time_{Fij}) + \beta_{3i}(satis_{Fij}) + \beta_{2i}(argue_{Fij}) + \beta_{3i}(press_{Fij})$$
$$\beta_{4i}(time_{Pij}) + \beta_{5i}(satis_{Pij}) + \beta_{6i}(argue_{Pij}) + \beta_{7i}(press_{Pij}) + R_{ij}$$

Level-2 Model:

$$\beta_{0i} = \gamma_{00} + \gamma_{01}(\overline{time}_{Fi}) + \gamma_{02}(\overline{satis}_{Fi}) + \gamma_{03}(\overline{argue}_{Fi}) + \gamma_{04}(\overline{press}_{Fi}) +$$
$$\gamma_{05}(\overline{time}_{Pi}) + \gamma_{06}(\overline{satis}_{Pi}) + \gamma_{07}(\overline{argue}_{Pi}) + \gamma_{08}(\overline{press}_{Pi}) + \gamma_{09}(depress_i) +$$
$$\gamma_{010}(sex_i) + \gamma_{011}(minority_i) + \gamma_{012}(SES_i) + U_{0i}$$

$$\beta_{1i} = \gamma_{10} + \gamma_{11}(\overline{time}_{Fi}) + \gamma_{12}(\overline{satis}_{Fi}) + \gamma_{+13}(\overline{argue}_{Fi}) + \gamma_{14}(\overline{press}_{Fi}) +$$
$$\gamma_{15}(\overline{time}_{Pi}) + \gamma_{16}(\overline{satis}_{Pi}) + \gamma_{17}(\overline{argue}_{Pi}) + \gamma_{18}(\overline{press}_{Pi}) + \gamma_{19}(depress_i) +$$
$$\gamma_{110}(sex_i) + \gamma_{111}(minority_i) + \gamma_{112}(SES_i)\ U_{1i}$$

In the Level-1 equation, within-person predictors of daily affective states were included for time spent with, satisfaction with time spent with, having arguments with, and feeling pressured by parents and friends. Continuous variables were all cluster-centered such that each represented a within-person, state-level effect. For example, in the model for positive affect, a positive relation with time spent with friends would indicate that on days when students report spending more time with friends than their own cross-time average, they also report higher levels of positive affect than their cross-time average. As dichotomous predictors cannot be centered at the within-person level,

the interpretation is not contextualized in a person's own cross time-average. Rather, it simply represents the presence of that predictor (e.g., felt pressure from parents), on that particular day.

In the Level-2 equation, random effects of the intercept and linear slope were predicted with between-person variables. These predictors included students' cross-time *average* levels of the same involvement and conflict constructs with parents and friends, representing trait-level effects. Average levels of involvement and conflict were grand-mean centered to represent the between-person effects. For example, in the growth model for negative affect, a positive relation between the linear slope and average levels of parental pressure would suggest that individuals who reported greater average daily levels of parental pressure reported more growth in negative affect across the ensuing college transition. Finally, students' baseline depressive symptoms, sex (0 = *female*, 1 = *male*), minority status (0 = *non-white minority*, 1 = *white*), and parent-education were entered as covariates. All analyses were conducted in *Mplus* 7.0 (Muthen and Muthen, 1998-2013) with a maximum likelihood estimator.

Results

Data Screening

Preliminary analyses were conducted on the variable cross-time averages to screen the data for outliers, skewness and kurtosis. Analyses revealed that none of the continuous variables in the study exhibited skewness values beyond 1.0/-1.0 and kurtosis values beyond 2.0/-2.0. Across all study variables, there were two univariate outliers beyond 3.00 standard deviations from the mean (Kline, 2011). Because there were so

few outliers, and because these scores did not belong to the same participant, all scores were retained for the analyses.

Missing data patterns were also examined, showing that between 30% – 44% of cases were missing data on a given study variable at a given survey assessment. Little's MCAR test was calculated on the study variables and was statistically significant, χ^2 (281) = 1623.47, $p < .001$, leading to a rejection of the null hypothesis that the missing values are missing completely at random (MCAR). Therefore, to examine if there were variables within the data set that might predict missingness, codes for missingness were created for each variable (0 = *non-missing*, 1 = *missing*) and logistic regressions and chi square tests were used to predicting missingness from SES, gender, and ethnicity. Across all variables, missingness was significantly more likely among males. Among the conflict indices (arguments, felt pressure), missingness was significantly more likely among non-white students and those whose parents had lower average education levels. These analyses suggest that the data may be missing at random (MAR), but are not missing completely at random (MCAR). As such, analyses adjusted for students' sex, ethnicity, and socioeconomic backgrounds, and missing values were handled using Full Information Maximum Likelihood (FIML), which allows for the inclusion of cases with missing data (Enders, 2010).

Descriptive Results

Table 1 presents the means and standard deviations for key study variables, which were calculated on participants' cross-time averages. First-year students reported moderate-to-high levels of positive affect and relatively low levels of negative affect. These students also reported moderate-to-high levels of daily involvement (time spent

with, satisfaction with time spent with) with parents and friends, and low proportions of daily conflict (arguments, felt pressure) with parents and friends. Comparisons across sex showed that males and females reported similar scores on most measures, except that females reported higher average daily levels of negative affect (Cohen's d = -.42) and males reported higher average daily levels of time in contact with parents (Cohen's d = .50).

Correlations revealed several notable findings with the dependent variables. First-year students' average positive affect scores were significantly and positively related to the average daily satisfaction with time spent with parents and friends. Average negative affect scores were associated with greater daily averages of felt-pressure and arguments with parents and friends, and with less satisfaction with time spent with parents and friends.

Growth Models

A series of multilevel growth models were estimated in a stepwise fashion to arrive at a model which best described the change trends in first-year students' positive and negative affect, respectively. Depressive symptoms, sex, ethnicity, and parents' education were controlled for on all fixed and random effects. For both the positive affect and negative affect models, time polynomials were specified as predictors of positive or negative affect, beginning with a linear slope, then a quadratic term, and then a cubic term. Time was centered at the college transition, and increasingly complex models were retained until a model did not produce better fit to the data than a previous model. Model fit was indexed using the -2 Log Likelihood, the Akaike Information Criterion (AIC; Akaike, 1973), and the Bayesian Information Criterion (BIC; Akaike, 1981). These fit

indices are all comparative fit indices with no inherent scaling. As such, they are only meaningful when two or more models of the same dataset are estimated for comparison. Models producing lower values on these indices represent better fit to the data.

Describing change in positive and negative affect. For predicting change in positive affect across the first semester of college, model estimation began by specifying a no-growth model. The addition of the linear slope improved the model's fit over the no-growth model (see Table 2 for comparative fit indices). Then, the quadratic term was added to the model, worsening model fit. Thus, the linear model was retained and the stepwise model building process ceased. Table 3 contains the mean and variance estimates of the intercept and slope for this model. On average, first-year students reported relatively high levels of positive affect at the transition to college, although these levels steadily and significantly decreased across the first semester. There was significant variability around this slope across the sample. Next, discontinuous change patterns were tested for by entering a dummy code for *transition event* and an interaction term between transition event and the linear slope. Results showed that the effect of the transition event was not significant, suggesting that there were not sustained, immediate changes in students' positive affect immediately following the transition event. The interaction term between transition event and the linear slope was marginally significant and negative, indicating that the rate of decline in positive affect slowed immediately following the transition event, though it did not stop.

For predicting change in negative affect, a no-growth model was first specified. The addition of the linear term improved model fit, and was thus retained over the no-growth model (see Table 2 for comparative fit indices). The addition of the quadratic

term in the next step produced worsened model fit from the previous linear model, and so this model was discarded and the stepwise model building process ceased. The linear model was retained as the best fitting model to the data. Results suggest that first year students showed relatively low levels of negative affect at the transition to college, and that there was no significant change in these levels across the first semester of college (see Table 4). However, there was significant between-person variability around this mean. Finally, discontinuous change patterns were tested and results indicated that neither the transition event nor the interaction term between transition event and the slope were significant, indicating no discontinuous growth in negative affect.

The role of daily interpersonal interactions. We then examined how daily indices of conflict and involvement, specifically time spent with, satisfaction with time spent with, arguments with, and feeling pressure from parents and friends, predicted within- and between-person variability in negative and positive affect. These models controlled for students' sex, ethnicity, parent-education level, and baseline depressive symptoms. Full results are presented in Tables 3 and 4 for positive and negative affect, respectively.

Positive affect. For predicting change in positive affect, there were no associations with the demographic controls sex, ethnicity, and parent education in the prediction of the between-person slope variance. Baseline depressive symptoms significantly predicted the positive affect intercept (but not the slope), $b = -.40$, $p = .009$, suggesting that students higher in depressive symptoms had reported lower initial levels of positive affect at the college transition. Above and beyond this, results revealed exclusively within-person effects for involvement (see Table 3). Specifically, time spent

with friends and satisfaction with time spent with friends predicted greater levels of positive affect. Interpreted, on days where students spent more time with their friends and were more satisfied with this time spent than their own cross-time averages, they also reported higher levels of positive affect. Time spent with parents did not significantly predict positive affect, although students' satisfaction with the time spent with parents did significantly and positively predict positive affect. Similar to the previous findings with friends, these findings suggest that, controlling for average levels of involvement, on days in which first year students report higher levels of satisfaction with time spent with parents than their own cross-time average, they reported greater levels of positive affect than their own cross-time average.

To determine the magnitude of the within-person effects, the proportional reduction in variance (PRV; Raudenbush & Byrk, 2002) was calculated for the set of predictors that were significant. The PRV is a commonly used local effect size estimate for multilevel modeling obtained by calculating the percent reduction in the residual variance (can be level-1 or level-2) by the addition of a particular variable or set of variables into the final model. In this way, it is comparable to the change in R^2 statistic that is frequently used in a hierarchical multiple regression analysis (Peugh, 2010). For the positive affect model, the addition of the set of significant predictors into the model (time spent with friends, satisfaction with time with friends, and satisfaction with time with parents) accounted for a 6.31% reduction of the residual variance in students' daily positive affect. There were no associations between any of the conflict indices (pressure, arguments) and positive affect.

Negative affect. In the prediction of negative affect, parent education was the only demographic control variable predicting the between-person slope variance, $b = .003$, $p = .002$, indicating that students whose parents had higher levels of education reported a slightly greater change in negative affect across the college transition. Baseline depressive symptoms predicted a higher intercept for negative affect (but did not predict its slope), $b = .80$, $p < .001$, indicating that more depressed students began college with higher levels of negative affect. Sex and minority status was not significant in the prediction of negative affect. Above and beyond these controls, there were significant, negative within-person associations between negative affect and satisfaction with time spent with friends and satisfaction with time spent with parents. Interpreted, on days in which students reported being more satisfied with the amount of time spent with friends and parents than their own cross-time average, they reported lower levels of negative affect. There was a positive within-person association between negative affect and having arguments with friends, meaning that on days in which students reported having an argument with their friends, they reported greater levels of negative affect. There were also significant, positive within-person associations with having arguments with parents and feeling pressure from parents and negative affect. In other words, on days in which students had arguments with parents and felt pressure from parents, they reported significantly greater levels of negative affect. The addition of these variables into the model (satisfaction with time with parents, satisfaction with time with friends, arguments with friends, arguments with parents, pressure from parents) accounted for a 14.04% reduction in the residual variance in students' daily negative affect.

There were also some significant and positive *between-person* associations. In regards to the intercept, greater average levels of time spent with friends and pressure felt from friends predicted a higher intercept for negative affect. In other words, when students had greater cross-time averages of time spent with friends and felt pressure from friends, they had higher levels of negative affect at the transition event. The slope was positively predicted by average levels of felt pressure from parents, suggesting that across the sample, higher average levels of perceived parental pressure predicted a greater average increase in negative affect across the first semester. There was also a significant and negative between-person association with felt pressure from friends, such that greater average levels of felt pressure predicted a greater average *decrease* in negative affect.

Discussion

For some emerging adults, the transition to college can impact psychological adjustment. For example, first-year students report higher average levels of stress and anxiety following their first semester of college (Brisette et al., 2002; Doane et al, 2015). Changes in social relationships (e.g., unfamiliar peer networks, greater autonomy from parents) are hypothesized as one underlying mechanism of these changes in well-being (Moreira & Telzer, 2015). However, researchers have not fully explored the *within-person* change patterns in students' psychological well-being across the college transition, or their fine-grained, day-to-day fluctuations in well-being and social relationships. I used a daily-diary method to document patterns of change in students' emotional well-being, indexed by positive and negative affect, across the first semester of college. I also examined how daily fluctuations (state) and individual differences (trait) in students' *involvement* and *conflict* with parents and friends predicted affective states

and trajectories, respectively. Overall, some support emerged for the supposition that well-being declines across the first semester of college. However, meaningful nuance in these trends was evident and might be partially explained by students' daily interactions with parents and friends. Generally, greater involvement with friends and parents was associated with greater positive and less negative affect, whereas greater conflict with these important social groups portended greater negative affect. Findings warrant prevention efforts to facilitate positive relationships with parents and peers during this critical developmental period.

Change Patterns in Positive and Negative Affect across the First Semester of College

The first goal of this study was to examine first-year students' trajectories of positive and negative affect across the first semester of college. I hypothesized that first-year college students would report declining positive affect and increasing negative affect during this time. This hypothesis received partial support, such that the data evidenced a linear and negative change pattern in positive affect. In particular, students reported high initial levels of positive affect in the month prior to the start of classes, and these levels declined steadily across the first semester. A marginally significant discontinuous parameter indicated that the rate of this decline slowed, but did not stop, immediately following the transition event (i.e., first day of classes). On the other hand, students generally remained stable in their negative affect across the first semester of college. The transition event exerted no effect on negative affective trajectories.

The linear decrease in positive affect is consistent with prior studies suggesting diminished well-being following the first semester of college (e.g., Bewick, Koutsopoulou, Miles, Slaa, & Barkham, 2010; Doane, Gress-Smith, & Breitenstein,

2015), and further advances this work by using a design and analytic strategy that allowed for the estimation of *within*-person trajectories while carefully controlling for potential statistical artifacts (e.g., regression to the mean, confounding measurement error with true change) that previous designs have been unable to accomplish. Thus, stronger evidence for declining psychological well-being across the first semester of college is herein provided. Greater attention is warranted from scholars and helping professionals to the potential health consequences of these declines. Positive affect represents a high-arousal state of pleasure, enjoyment, and engagement, and is suggested in the literature to be protective (Watson et al., 1988). In several major investigations, lower positive affect has indicated depressive symptomology (Crawford & Henry, 2004). Therefore, the marked declines in positive affect documented in this study may indicate an increasing risk for depression and perhaps other psychological problems during the first semester of college. Even more, strong evidence now shows that positive affect can predict physical health outcomes, such as resistance to infection (Cohen, Alpher, Doyld, Treanor, & Turner, 2006), as well as a variety of health behaviors, such as exercising regularly, eating well, and not smoking (Grant, Wardle, & Steptoe, 2009). Future studies can contribute to this literature by investigating the consequences for students' physical health that potentially emerge from their declining well-being.

Of note is the shape of students' positive affective trajectories, particularly in regards to discontinuous change. It is frequently assumed, though still untested, that abrupt ecological changes at the college transition (e.g., in social networks, living arrangements, and academic demands) might be a catalyst for similarly abrupt declines in affective well-being (e.g., Cooke et al., 2006; Gall et al., 2000). The present results

contradicted this assumption. There was marginally significant evidence for discontinuous change in positive affect, but this effect indicated that the rate of this decline *slowed* (though it did not stop) following the transition event. The overall shape of students' trajectories, therefore, indicated a more gradual pattern of decline. Although some students might find the abrupt changes in their social environments to be stressful, these changes do not appear to be so overwhelming so as to produce immediate and sustained changes in well-being. Research is still needed to identify the mechanisms of students' declining positive affect, but the shape of these trajectories is helpful in this regard. It may rather be the accumulating pressures across the semester, including heavy workloads, impending due dates, that can exhaust students and lead to a decline in positive affect. Such a hypothesis seems more consistent with the trajectories documented in this study. Given the implications of these declines for first-year students' well-being, research identifying the mechanisms of these declines in well-being is a priority.

Of course, the declines in positive affect must be reconciled with the relatively stable trajectories in negative affect. One possible explanation is that the college transition might present a greater risk for some mental health challenges than others. Low positive affect represents an absence of energy, engagement and pleasure, and is not equivalent to negative affect, which represents high-arousal negative emotionality (e.g., nervousness, distress). In terms of mental disorders, negative affect has been most closely associated with stress and anxiety (Watson et al., 1988). Thus, at face value, results from this study may indicate that first-year students are more susceptible to declines in their high-arousal positive emotions than to increases in high-arousal negative emotion (e.g., toward greater anxiety). Admittedly, however, this explanation is

inconsistent with prior studies that show students' average levels of anxiety and stress to be *greater* following the college transition (e.g., Doane et al., 2015; Andrews & Whiting, 2004).

Another possible explanation might reflect differences in how the scales for positive and negative affect behave. Very early work on affective states suggested positive and negative affect might respond to different types of daily events. Whereas day-to-day positive affect responds to a broad array of rewarding events, negative affect is of a more reactive nature, and therefore responds more narrowly to alarming events such as short-term stressors and health problems (Clark & Watson, 1988). As a result, negative affect might be less capable as a scale for detecting secular trends, such as gradual change trajectories across time. Although students may experience daily fluctuations in their negative affect, and though these fluctuations are significant in their implications, these measures may simply not be sensitive to sustained change over time. Accordingly, findings should not be interpreted as directly contradictory to previous work (e.g., Doane et al., 2015), but warrants further intensive, longitudinal work to determine the direction of change in and shape of these high-arousal, negative emotional trajectories (such as anxiety and stress) across the college transition.

Involvement and Conflict with Parents and Friends

The second goal of this study was to investigate how daily interactions with friends and parents predicted variability in first-year students' affective states and trajectories. Of particular interest were indices of interpersonal involvement (time spent with, satisfaction with time spent with) and conflict (felt pressure from, having arguments with) with friends and parents. Hypotheses were generally supported. Daily involvement

with friends and parents predicted higher levels of positive affect. In particular, on days in which students spent more time with friends, and when these students were more satisfied with the time they spent with both parents and friends, they reported greater levels of positive affect. These indices predicted even more variability in daily negative affect. Specifically, when students were satisfied with the amount of time they spent interacting with parents and friends, they reported lower levels of negative affect. On the other hand, when students reported feeling pressured by parents, and when they experienced arguments with parents or friends, they reported greater negative affect.

In addition to these daily, state-level associations, *average* levels of involvement and conflict forecasted characteristics of students' growth in negative affect. The intercept for negative affect was predicted by students' average amount of time spent with friends and average levels of pressure from friends. Specifically, students that spent more time with friends and felt pressure from friends more often reported higher levels of negative affect at the college transition (i.e., the intercept centered at the first day of class). The slope was predicted by average levels of felt pressure from both parents and friends. Specifically, students that felt pressure more often from parents reported greater increases in negative affect across the first semester, whereas students who felt pressure more often from friends reported declining levels of negative affect during the same time frame.

Prior work has demonstrated that having supportive relationships with parents and friends is generally linked to improved functioning during college, including enhanced coping strategies and fewer internalizing problems (Moreira & Telzer, 2015; Mounts et al., 2006; Tao et al., 2000). The present study advances this literature by showing that

characteristics of these relationships predict *day-to-day* fluctuations in students' affective states during the transition to college, a potentially sensitive period for the emergence of psychological difficulties. As such, they further emphasize the importance of these relationships for first-year students' well-being, implicating them as points of leverage for prevention efforts. Indeed, not only do students have regular contact with parents and friends, but these relationships are venues in which critical, stage-salient developmental tasks are resolved, including a greater differentiation from family (Aquilino, 2006) and the maintenance of close interpersonal ties (Larson & Richards, 1994). A core tenet of developmental theory is that the competent resolution of stage-salient tasks is a critical foundation for positive adaptation (Cicchetti et al., 2002). Therefore, the degree to which characteristics of these relationships complement or detract from these stage-salient needs has significant implications for students' psychological adjustment (Cowen, 1994; Eccles & Midgley, 1993).

The pattern of results from this study are consistent with such theorizing. For example, greater involvement with friends (i.e., spending time with friends and being satisfied with that time spent) predicted greater positive affect, whereas arguments with friends predicted greater negative affect. These patterns may reflect adolescents' increasing need for close friendships as they move into emerging adulthood (Brown & Larson, 2009). Being more involved with friendships during this transitory period may help fulfill these needs for closeness, and might even contribute to the development of stage-salient skills, such as coping strategies (Dyson & Renk, 2006) and self-esteem (Collins & Sternberg, 2006), which can buffer against the stresses of the college transition. One exception to these patterns was that trait levels (i.e., higher *average* daily

levels) of felt pressure from friends negatively predicted the slope for negative affect, indicating that more frequent felt-pressure from friends predicted a declining trajectory in negative affect across the first semester. This probably does not indicate a protective effect of more frequent pressure from friends. A careful look at the data suggests that it likely reflects a ceiling effect in the model, as more frequent pressure from friends was also associated with a relatively large increase in negative affect at the intercept (i.e., the transition to college). Interpreted in this light, students with a high frequency of felt pressure from friends are predicted to begin so high (relatively) in negative affect at the transition to college that the only reasonable direction of change is downward.

Relationships with parents predicted students' affect in similar ways to friends, though there were theoretically meaningful differences. For example, in regards to involvement with parents, it was not the amount of time spent with parents, but rather students' satisfaction with the amount of time spent with parents that predicted positive affect. This could reflect emerging adults' needs for greater individuation, where involvement is still protective (Padilla-Walker et al., 2008), but at levels that respect personal boundaries and independence (Aquilino, 2006). Indeed, parental *over*-involvement is linked to various problems during emerging adulthood, including higher internalizing symptoms, lower self-worth (Nelson & Padilla-Walker, 2011), and more problem behaviors (Urry, Nelson, & Padilla-Walker, 2011). Results from this study accorded; greater conflict with parents, and in particular, pressure, predicted both state fluctuations and growth trajectories in negative affect. While we cannot be certain as to the precise meaning of this pressure (i.e., its content) given our single-item, dichotomous measure, these findings are in line with prior investigations of similar constructs (e.g.,

helicopter parenting, psychological control), and evidence that these processes predict negative affect at a fine-grained, daily level.

Taken together, results are consistent with both previous studies and developmental theory regarding the importance of these relationships during college. They also advance this knowledge in that they show that these relationships can impact both students' daily fluctuations in affective states, as well as their affective trajectories, across the transition to college, a sensitive period for the emergence of psychological difficulties. The implications can be critical because students have regular and repeated interactions with parents and friends, and these 'proximal processes' can shape long-term trajectories of psychological well-being (Cichetti et al., 2002; Elder, 1998) and thus more distal outcomes across the life-course (Bronfenbrener & Morris, 2006; Masten & Cicchetti, 2010). For this reason, findings both warrant and inform prevention efforts that aim to promote well-being during the college transition. For example, they underscore the importance of positive peer relationships during college as both sources of support and the development of psychological competencies. They also highlight the need for families to remain involved with their children during this potentially stressful transition, but to do so in ways that respect emerging adults' autonomy needs (Aquilino, 2006), so as to not risk the consequences of parental *over*-involvement.

Limitations

This study is not without limitations. Although the intensive repeated measures facilitated the estimation of intra-individual change trajectories, the associations between affective states and relationship characteristics were estimated from same-day assessments. As such, the directionality of these results cannot be confirmed. Although

it is consistent with theory and prior work to interpret relationship characteristics as influencing affective states, the study cannot rule out relations that may proceed in the opposite direction. For example, negative affect might lead to increases in relationship challenges such as conflict, whereas positive affect might lead to greater involvement with friends and parents. Designs with closer measurement points than the current study are needed to implement the appropriate time-lags that can disentangle these processes (Larson & Almeida, 1999).

Another limitation is that our measures of conflict and involvement with parents and friends were single items. This is not atypical within ecological momentary assessment designs (Cranford, Shrout, Iida, Rafaeli, Yip, & Bolger, 2008), as it facilitates intensive, ecologically valid repeated measures by reducing participant burden. However, caution must be exercised when interpreting the meaning of these items. For example, although parental pressure was linked to affective states in theoretically consistent ways, we could not differentiate the content or context of these pressures, which may vary meaningful among students. Similar principles apply to involvement: satisfaction with time spent with others could indicate that students are happy that they spent a lot of time with others, or that they are satisfied with what *little* time they spent with others. Careful judgment must be exercised when interpreting these constructs.

Finally, the focus of this study was specific to the college transition, which is a sensitive period for the emergence of psychological difficulties. Although this focus was deliberate and allows us to make an important contribution to the literature, abrupt transitions are, by nature, characterized by brief periods of destabilization in routines and

social structures. Therefore, results may not generalize to a broader emerging adult or even college population.

Conclusions

The college transition is challenging for many first-year college students, who exhibit gradually declining levels of emotional well-being throughout the first semester. Parents and friends are two social groups with whom first-year students have regular and repeated contact. Characteristics of this day-to-day contact can be both protective and damaging, immediately or prospectively, as evidenced in this study. Therefore, these relational contexts might be useful venues for the implementation of prevention efforts, and findings from this study provide important insights into how relationship assets can be leveraged in ways to promote first-year college students' mental health.

General Discussion

Adolescence is a sensitive period for the emergence of psychological difficulties (Merikangas, 2010). Because interpersonal relationships are a consistent antecedent of adolescents' psychological well-being (e.g., Nangle et al., 2003), many existing interventions seek to leverage these relationship assets to promote positive adjustment. Developmental theory further suggests that 'turning points' might be an optimal time to intervene (Elder, 1998; Seidman & French, 2004). Turning points often result from challenging situational experiences that alter the 'match' between an individual's social environments and his/her developmental needs (Eccles & Midgley, 1993). As such, these experiences can modify developmental trajectories moving forward, for better or for worse (Elder, 1998; Rutter, 1987). However, very little research has examined how adolescents' interpersonal relationships are associated with psychological well-being during developmental turning points. The brief nature of these periods means that they are challenging to study using conventional cross-sectional or longer-lagged longitudinal designs.

To address these gaps, I used an innovative ecological momentary assessment design (EMA) to examine how adolescents' interpersonal relationships predicted variability in their emotional well-being during two developmentally normative, yet challenging contexts: romantic relationships and the transition to college. Findings showed these important social groups to be meaningfully linked to adolescents' emotion well-being, at a daily level, during these periods. Study 1 provided evidence that adolescents' romantic partners might contribute to their daily negative affective states in considerable ways. Several relationship processes were found to uniquely explain

adolescents' day-to-day negative affect. For example, challenging relationship experiences, such as conflict and intense romantic emotionality (e.g., jealousy), predicted greater same-day negative affect. Evidence also indicated the presence of an emotion co-regulation process among adolescent romantic partners. Adolescents covaried in their same-day negative affective states above and beyond shared negative experiences, evidencing a highly complex, yet subtle 'emotion contagion' mechanism (Hatfield, 1994). These results provide compelling insight into the role that adolescents' romantic relationships play in their daily emotional well-being.

Study 2 demonstrated the important role of parents and friends in supporting and/or hindering first-year college students' emotional well-being during the transition to college. In particular, indices of daily conflict and involvement with these important social groups portended not only students' affective trajectories across the college transition, but also students' daily affective states during this same period. Generally, greater involvement with friends and parents was associated with greater positive and less negative affect, whereas greater conflict with these important social groups predicted greater negative affect.

These studies have important implications for both theory and practice. In particular, they emphasize the importance of promoting positive attachments during developmentally-challenging contexts. The centrality of these attachments for adolescents' psychological wellness is broadly acknowledged by researchers and interventionists alike (Cowen, 1994; Cicchetti & Rogasch, 2002). This dissertation underscores this literature by documenting that relationship assets and liabilities predict even day-to-day emotional well-being during developmentally-sensitive periods that can

shape longer term developmental trajectories (Eccles & Midgley, 1993; Elder, 1998; Siedman & French, 2004). Of course, it is critical to acknowledge that the ability of these relationships to benefit adolescents' adjustment depends, in part, on the degree to which they are developmentally complementary (see Guttman & Eccles, 2007; Cicchetti & Rogasch, 2002). Eccles and Midgley (1993) have asserted that when social contexts support stage-salient needs, adolescents are more likely to thrive; when these contexts undermine these needs, adolescents are likely to experience difficulties. Study 1 provides evidence that the socio-emotional demands of romantic relationship processes (e.g., romantic conflict) might exceed the reach of adolescents' cognitive-emotional competencies (Larson et al., 1999), resulting in negative, reactive emotionality. In Study 2, involvement with friends predicted better emotional adjustment as expected. However, it was students' satisfaction with parental involvement, rather than involvement per se, that predicted emotional well-being. This might reflect students' growing need for differentiation from parents as their autonomy needs become more salient. Indeed, the same study showed that felt pressure from parents predicted daily fluctuations, as well as longer-term trajectories, of negative affect. The implication from these findings is that prevention and intervention efforts that promote positive attachments should engineer these environments in ways that support stage-salient needs. Finally, these studies also provide some evidence that developmentally-sensitive periods, or turning points, can actually be optimal periods for prevention and early intervention efforts because these periods present opportunities for both growth and decline (Rutter, 1987; Seidman & French, 2004). Adolescence is an inherently transitory period during the life course, and so there may be several such periods for these efforts to target.

Altogether, these studies underscore the need for organizing positive relationships with parents and peers during adolescence as a means of promoting psychological wellness. These relationships appear to be particularly relevant during developmentally-challenging contexts, of which there are many throughout adolescence. The day-to-day interactions that adolescents have with these important social groups constitute the fundamental socializing mechanisms that drive development and change (Bronfenbrenner & Morris, 2006), and so in the context of these brief, potential turning points, such relationship assets can be critical in their implications.

References

Adams, R. E., & Laursen, B. (2007). The correlates of conflict: disagreement is not necessarily detrimental. *Journal of Family Psychology*, *21*(3), 445 - 458.

Adams, R., & Laursen, B. (2001). The organization and dynamics of adolescent conflict with parents and friends. *Journal of Marriage and Family*, *63*(1), 97-110.

Akaike, H. (1973). Information theory and an extension of the maximum likelihood principle. In B.N. Petrov and F. Csaki (Eds.), *Second international symposim on information theory* (pp. 267-281). Budapest: Academiai Kiado.

Akaike, H. (1981). Likelihood of a model and information criteria. *Journal of Econometrics*, *16*(1), 3-14.

Alfeld-Liro, C., & Sigelman, C. K. (1998). Sex differences in self-concept and symptoms of depression during the transition to college. *Journal of Youth and Adolescence*, *27*(2), 219-244.

American College Health Association (2013). National College Health Assesssment: Reference group executive summary, Spring 2013. Retrieved from http://www.acha-ncha.org/docs/ACHA-NCHA-II_ReferenceGroup_ExecutiveSummary_Spring2013.pdf

Anderson, C., Keltner, D., & John, O. P. (2003). Emotional convergence between people over time. *Journal of Personality and Social Psychology*,*84*(5), 1054-1068.

Andrews, B., & Wilding, J. M. (2004). The relation of depression and anxiety to life-stress and achievement in students. *British Journal of Psychology*, *95*(4), 509-521.

Angold, A., & Costello, E. J. (2006). Puberty and Depression. *Child and Adolescent Psychiatric Clinics of North America*, *15*(4), 919-937.

Aquilino, W.S. (2006). Family relationships and support systems in emerging adulthood. In J.J. Arnett and J. Tanner (Eds.), *Coming of age in the 21st century: The lives and contexts of emerging adults.* Washington, DC: American Psychological Association.

Arnett, J. J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist*, *54*(5), 317-326.

Auerbach, R. P., Bigda-Peyton, J. S., Eberhart, N. K., Webb, C. A., & Ho, M. H. R. (2011). Conceptualizing the prospective relationship between social support, stress, and depressive symptoms among adolescents. *Journal of Abnormal Child Psychology*, *39*(4), 475-487.

Bewick, B., Koutsopoulou, G., Miles, J., Slaa, E., & Barkham, M. (2010). Changes in undergraduate students' psychological well-being as they progress through university. *Studies in Higher Education, 35*(6), 633-645.

Bolger, N., DeLongis, A., Kessler, R. C., & Wethington, E. (1989). The contagion of stress across multiple roles. *Journal of Marriage and the Family*, 175-183.

Brent, D. A., Perper, J. A., Moritz, G., Baugher, M., Roth, C., Balach, L., & Schweers, J. (1993). Stressful life events, psychopathology, and adolescent suicide: A case control study. *Suicide and Life-Threatening Behavior*, *23*(3), 179-187.

Brissette, I., Scheier, M. F., & Carver, C. S. (2002). The role of optimism in social network development, coping, and psychological adjustment during a life transition. *Journal of Personality and Social Psychology*, *82*(1), 102-111.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. *Handbook of Child Psychology*. In R.M. Lerner (Ed.) *Handbook of child development: Vol. 1. Theoretical models of human development* (6th ed., pp. 793-828). Hoboken, NJ: Wiley.

Brown, .B., & Larson, J. (2009). Peer relationship in adolescence. In R.M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (3rd ed., pp. 74-103). New York, NY: Wiley.

Burk, W., & Laursen, B. (2005). Adolescent perceptions of friendship and their associations with individual adjustment. *International Journal of Behavioral Development, 29*(2), 156-164.

Butner, J., Diamond, L. M., & Hicks, A. M. (2007). Attachment style and two forms of affect coregulation between romantic partners. *Personal Relationships, 14*(3), 431-455.

Carver, K., Joyner, K., & Udry, J.R. (2003). National estimates of adolescent romantic relationships. In P. Florsheim (Ed.) *Adolescent romantic relationships and sexual behavior: Theory, research, and practical implications* (pp. 291 – 329). New York, NY: Cambridge University.

Cicchetti, D., & Rogosch, F. A. (2002). A developmental psychopathology perspective on adolescence. *Journal of Consulting and Clinical Psychology*, *70*(1), 6.

Cicchetti, D., & Toth, S. L. (1998). The development of depression in children and adolescents. *American Psychologist*, *53*(2), 221.

Clark, L. A., & Watson, D. (1988). Mood and the mundane: relations between daily life events and self-reported mood. *Journal of Personality and Social Psychology, 54*(2), 296-308.

Cohen, S., Alper, C. M., Doyle, W. J., Treanor, J. J., & Turner, R. B. (2006). Positive emotional style predicts resistance to illness after experimental exposure to rhinovirus or influenza A virus. *Psychosomatic Medicine, 68*(6), 809-815.

Collins, W. A. (2003). More than myth: The developmental significance of romantic relationships during adolescence. *Journal of Research on Adolescence*, *13*(1), 1-24.

Collins, W.A., & Gunnar, M.R. (1990). Social and personality development. *American Review of Psychology, 41,* 366-416.

Connolly, J., & McIsaac, C. (2009). Adolescents' explanations for romantic dissolutions: A developmental perspective. *Journal of Adolescence*, *32*(5), 1209-1223.

Connolly, J., & McIsaac, C. (2011). Romantic relationships in adolescence. In M. K. Underwood and L.H. Rosen (Eds.) *Social development: Relationships in infancy, childhood, and adolescence* (pp. 180-206). New York, NY: Guilford.

Connolly, J., Craig, W., Goldberg, A., & Pepler, D. (1999). Conceptions of cross-sex friendships and romantic relationships in early adolescence. *Journal of Youth and Adolescence, 28*(4), 481-494.

Cooke, R., Bewick, B. M., Barkham, M., Bradley, M., & Audin, K. (2006). Measuring, monitoring and managing the psychological well-being of first year university students. *British Journal of Guidance & Counselling*, *34*(4), 505-517.

Cowen, E. L. (1994). The enhancement of psychological wellness: Challenges and opportunities. *American journal of community psychology*, *22*(2), 149-179.

Cranford, J. A., Shrout, P. E., Iida, M., Rafaeli, E., Yip, T., & Bolger, N. (2006). A procedure for evaluating sensitivity to within-person change: Can mood measures in diary studies detect change reliably?. *Personality and Social Psychology Bulletin*, *32*(7), 917-929.

Crawford, J.R., & Henry, J.D. (2004). The positive and negative affect schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample. *British Journal of Clinical Psychology, 43,* 245-265.

Cronbach, L. J., & Furby, L. (1970). How we should measure" change": Or should we?. *Psychological Bulletin*, *74*(1), 68.

Davila, J. (2008). Depressive symptoms and adolescent romance: Theory, research, and implications. *Child Development Perspectives*, *2*(1), 26-31.

Davila, J., Steinberg, S. J., Kachadourian, L., Cobb, R., & Fincham, F. (2004). Romantic involvement and depressive symptoms in early and late adolescence: The role of a preoccupied relational style. *Personal Relationships*, *11*(2), 161-178.

Davila, J., Stroud, C. B., Starr, L. R., Miller, M. R., Yoneda, A., & Hershenberg, R. (2009). Romantic and sexual activities, parent–adolescent stress, and depressive symptoms among early adolescent girls. *Journal of Adolescence*, *32*(4), 909-924.

De Goede, I. H., Branje, S. J., Delsing, M. J., & Meeus, W. H. (2009). Linkages over time between adolescents' relationships with parents and friends. *Journal of youth and adolescence*, *38*(10), 1304-1315.

Diamond, L.M., Savin-Williams, R.C., & Dubé, E.M. (1999). Sex, dating, passionate friendships, and romance: Intimate peer relations among lesbian, gay, and bisexual adolescents. In W. Furman, B. Brown, and C. Feiring (Eds.) *The development of romantic relationships in adolescence* (pp. 175-210). Cambridge, UK: Cambridge University Press.

Dishion, T. J., & Dodge, K. A. (2005). Peer contagion in interventions for children and adolescents: Moving towards an understanding of the ecology and dynamics of change. *Journal of Abnormal Child Psychology*, *33*(3), 395-400.

Dishion, T. J., Ha, T., & Véronneau, M. H. (2012). An ecological analysis of the effects of deviant peer clustering on sexual promiscuity, problem behavior, and childbearing from early adolescence to adulthood: an enhancement of the life history framework. *Developmental Psychology*,*48*(3), 703.

Doane, L. D., Gress-Smith, J. L., & Breitenstein, R. S. (2015). Multi-method assessments of sleep over the transition to college and the associations with depression and anxiety symptoms. *Journal of Youth and Adolescence*, *44*(2), 389-404.

Downey, G., & Feldman, S. I. (1996). Implications of rejection sensitivity for intimate relationships. *Journal of Personality and Social Psychology*, *70*(6), 1327 -1343.

Downey, G., Bonica, C., & Rincón (1999). Rejection sensitivity and adolescent romantic relationships. N W. Furman, B. Brown, & C. Feiring (eds.), *The development of romantic relationships in adolescence* (pp. 148-174). New York, NY: Cambridge University Press.

Doyle, A. B., Brendgen, M., Markiewicz, D., & Kamkar, K. (2003). Family relationships as moderators of the association between romantic relationships and adjustment in early adolescence. *The Journal of Early Adolescence*, *23*(3), 316-340.

Dyson, R., & Renk, K. (2006). Freshmen adaptation to university life: Depressive symptoms, stress, and coping. *Journal of Clinical Psychology*,*62*(10), 1231-1244.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & MacIver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist*, *48*(2), 90.

Elder, G. H. (1998). The life course as developmental theory. *Child Development*, *69*(1), 1-12.

Enders, C.K. (2010). *Applied missing data analysis.* New York, NY: Guilford Press.

Fingerman, K. L., Cheng, Y. P., Wesselmann, E. D., Zarit, S., Furstenberg, F., & Birditt, K. S. (2012). Helicopter parents and landing pad kids: Intense parental support of grown children. *Journal of Marriage and Family*, *74*(4), 880-896.

Friedlander, L. J., Reid, G. J., Shupak, N., & Cribbie, R. (2007). Social support, self-esteem, and stress as predictors of adjustment to university among first-year undergraduates. *Journal of College Student Development*, *48*(3), 259-274.

Furman, W., & Shomaker, L. B. (2008). Patterns of interaction in adolescent romantic relationships: Distinct features and links to other close relationships. *Journal of Adolescence*, *31*(6), 771-788.

Furman, W., Brown, B. B., & Feiring, C. (1999). *The development of romantic relationships in adolescence*. Cambridge University Press.

Furman, W., Ho, M., & Low, S. (2008). The rocky road of adolescent romantic experience: Dating and adjustment. In R. Engles, M. Kerr, and H. Stattin (Eds.) *Friends, lovers, and groups: Key relationships in adolescence* (pp. 61-80). New York, NY: Wiley.

Gall, T. L., Evans, D. R., & Bellerose, S. (2000). Transition to first-year university: Patterns of change in adjustment across life domains and time. *Journal of Social and Clinical Psychology*, *19*(4), 544.

Gottman, J.M. (1993). The roles of conflict engagement, escalation, and avoidance in marital interactions: a longitudinal view of five types of couples. *Journal of Consulting and Clinical Psychology*, *61*, 6-15.

Grant, N., Wardle, J., & Steptoe, A. (2009). The relationship between life satisfaction and health behavior: a cross-cultural analysis of young adults. *International Journal of Behavioral Medicine*, *16*(3), 259-268.

Gurtman, M. B., Martin, K. M., & Hintzman, N. M. (1990). Interpersonal reactions to displays of depression and anxiety. *Journal of Social and Clinical Psychology*, *9*(2), 256-268.

Gutman, L. M., & Eccles, J. S. (2007). Stage-environment fit during adolescence: trajectories of family relations and adolescent outcomes. *Developmental Psychology*, *43*(2), 522.

Ha, T., Dishion, T. J., Overbeek, G., Burk, W. J., & Engels, R. C. (2014). The blues of adolescent romance: Observed affective interactions in adolescent romantic

relationships associated with depressive symptoms. *Journal of Abnormal Child Psychology, 42*(4), 551-562.

Ha, T., Overbeek, G., Cillessen, A. H., & Engels, R. C. (2012). A longitudinal study of the associations among adolescent conflict resolution styles, depressive symptoms, and romantic relationship longevity. *Journal of Adolescence, 35*(5), 1247-1254.

Ha, T., Yeung, E. W., Rogers, A. A., Poulsen, F. O., Kornienko, O., & Granger, D. A. (2016). Supportive behaviors in adolescent romantic relationships moderate adrenocortical attunement.*Psychoneuroendocrinology, 74*, 189-196.

Hall, G.S. (1904). *Adolescence: Its psychology and its relation to physiology, anthropology, sociology, sex, crime, religion, and education* (Vols I & II). Englewood Cliffs, NJ: Prentice-Hall.

Harter, S., & Buddin, B.J. (1987). Children's understanding of the simultaneity of two emotions: A five stage developmental acquisition sequence. *Developmental Psychology, 23*(3), 388-389.

Hatfield, E., Cacioppo, J.T., & Rapson, R.L. (1994). *Emotional contagion.* Cambridge, England: Cambridge University Press.

Hawker, D. S., & Boulton, M. J. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: a meta-analytic review of cross-sectional studies. *Journal of Child Psychology and Psychiatry*, *41*(4), 441-455.

Hill, J. P., & Lynch, M. E. (1983). The intensification of gender-related role expectations during early adolescence. In J. Brooks-Gunn and A. Petersen (Eds.) *Girls at puberty: Biological and psychosocial perspectives* (pp. 201-228). New York, NY: Plenum.

Iida, M., Shrout, P. E., Laurenceau, J. P., & Bolger, N. (2012). Using diary methods in psychological research. In H. Cooper, P. Camic, D. Long, A. T. Panter, D. Rindskopf, & K. Sher (Eds.), *APA handbook of research methodology in psychology (3 volumes)*. Washington, DC: APA Books.

Johnson, W. L., Giordano, P. C., Manning, W. D., & Longmore, M. A. (2015). The age–IPV curve: Changes in the perpetration of intimate partner violence during adolescence and young adulthood. *Journal of Youth and Adolescence, 44*(3), 708-726.

Joyner, K., & Udry, J. R. (2000). You don't bring me anything but down: Adolescent romance and depression. *Journal of Health and Social Behavior*, 369-391.

Kline, R.B., (2011). Principles and practices of structural equation modeling, third edition. New York, NY: Guilford.

Larose, S., & Boivin, M. (1998). Attachment to parents, social support expectations, and socioemotional adjustment during the high school-college transition. *Journal of Research on Adolescence*, *8*(1), 1-27.

Larson, R. W., & Almeida, D. M. (1999). Emotional transmission in the daily lives of families: A new paradigm for studying family process. *Journal of Marriage and the Family*, 61(1), 5-20.

Larson, R. W., & Gillman, S. (1999). Transmission of emotions in the daily interactions of single-mother families. *Journal of Marriage and the Family*, 21-37.

Larson, R. W., & Richards, M. H. (1994). Family emotions: Do young adolescents and their parents experience the same states?. *Journal of Research on Adolescence*, *4*(4), 567-583.

Larson, R. W., Richards, M. H., & Perry-Jenkins, M. (1994). Divergent worlds: the daily emotional experience of mothers and fathers in the domestic and public spheres. *Journal of Personality and Social Psychology*, *67*(6), 1034-1046.

Larson, R.W., Clore, G.L., & Wood, G.A. (1999). The emotions of romantic relationships: Do they wreak havoc on adolescents? Intimate peer relations among lesbian, gay, and bisexual adolescents. In W. Furman, B. Brown, and C. Feiring (Eds.) *The development of romantic relationships in adolescence* (pp. 175-210). Cambridge, UK: Cambridge University Press.

Laurenceau, J. P., & Bolger, N. (2005). Using diary methods to study marital and family processes. *Journal of Family Psychology*, *19*(1), 86.

Laurent, H. K., Kim, H. K., & Capaldi, D. M. (2009). Longitudinal effects of conflict behaviors on depressive symptoms in young couples. *Journal of Family Psychology*, *23*(4), 596-605.

Laursen, B., & Collins, W. A. (1994). Interpersonal conflict during adolescence. *Psychological Bulletin*, *115*(2), 197-209.

Laursen, B., & Hafen, C. A. (2010). Future directions in the study of close relationships: Conflict is bad (except when it's not). *Social Development*,*19*(4), 858-872.

Lee, C., Dickson, D. A., Conley, C. S., & Holmbeck, G. N. (2014). A closer look at self-esteem, perceived social support, and coping strategy: a prospective study of depressive symptomatology across the transition to college. *Journal of Social and Clinical Psychology*, *33*(6), 560.

Levant, R. F., & Pollack, W. S. (1995). *A new psychology of men*. New York, NY: Basic Books.

Levant, R. F., Richmond, K., Majors, R. G., Inclan, J. E., Rossello, J. M., Heesacker, M., & Sellers, A. (2003). A multicultural investigation of masculinity ideology and alexithymia. *Psychology of Men & Masculinity*,*4*(2), 91 – 99.

Liu, S., Rovine, M. J., Cousino Klein, L., & Almeida, D. M. (2013). Synchrony of diurnal cortisol pattern in couples. *Journal of Family Psychology*, *27*(4), 579.

Loeber, R., Farrington, D. P., Stouthamer-Loeber, M., & Van Kammen, W. B. (1998). *Antisocial behavior and mental health problems: Explanatory factors in childhood and adolescence*. Psychology Press.

Lowe, K., Dotterer, A. M., & Francisco, J. (2015). "If I Pay, I Have a Say!" Parental Payment of College Education and its Association with Helicopter Parenting. *Emerging Adulthood*, *3*(4), 286-290.

Luyckx, K., Soenens, B., Vansteenkiste, M., Goossens, L., & Berzonsky, M. D. (2007). Parental psychological control and dimensions of identity formation in emerging adulthood. *Journal of Family Psychology*, *21*(3), 546-550.

Maccoby, E. E. (1990). Gender and relationships: A developmental account. *American psychologist*, *45*(4), 513 – 520.

Masten, A. S., & Cicchetti, D. (2010). Developmental cascades. *Development and psychopathology*, *22*(3), 491-495.

Mattanah, J. F., Lopez, F. G., & Govern, J. M. (2011). The contributions of parental attachment bonds to college student development and adjustment: a meta-analytic review. *Journal of Counseling Psychology*, *58*(4), 565.

McIsaac, C., Connolly, J., McKenney, K. S., Pepler, D., & Craig, W. (2008). Conflict negotiation and autonomy processes in adolescent romantic relationships: An observational study of interdependency in boyfriend and girlfriend effects. *Journal of Adolescence*, *31*(6), 691-707.

Merikangas, K. R., He, J. P., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., ... & Swendsen, J. (2010). Lifetime prevalence of mental disorders in US adolescents: results from the National Comorbidity Survey Replication–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry*, *49*(10), 980-989.

Monroe, S. M., Rohde, P., Seeley, J. R., & Lewinsohn, P. M. (1999). Life events and depression in adolescence: relationship loss as a prospective risk factor for first onset of major depressive disorder. *Journal of Abnormal Psychology*, *108*(4), 606-614.

Moreira, J. F. G., & Telzer, E. H. (2015). Changes in family cohesion and links to depression during the college transition. *Journal of Adolescence*, *43*, 72-82.

Mounts, N. S., Valentiner, D. P., Anderson, K. L., & Boswell, M. K. (2006). Shyness, sociability, and parental support for the college transition: Relation to adolescents' adjustment. *Journal of Youth and Adolescence, 35*(1), 68-77.

Muthén, L. K., & Muthén, B. O. (1998–2013). Mplus user's guide. Seventh edition. Los Angeles: Muthén & Muthén.

Nangle, D. W., Erdley, C. A., Newman, J. E., Mason, C. A., & Carpenter, E. M. (2003). Popularity, friendship quantity, and friendship quality: Interactive influences on children's loneliness and depression. *Journal of Clinical Child and Adolescent Psychology, 32*(4), 546-555.

Nannis, E.D., & Cowan, P.A. (1987). Emotional understanding: A matter of age, dimension, and point of view. *Journal of Applied Developmental Psychology, 8,* 289-304.

Nelson, L. J., Padilla-Walker, L. M., Christensen, K. J., Evans, C. A., & Carroll, J. S. (2011). Parenting in emerging adulthood: An examination of parenting clusters and correlates. *Journal of youth and adolescence, 40*(6), 730-743.

Padilla-Walker, L. M., & Nelson, L. J. (2012). Black hawk down?: Establishing helicopter parenting as a distinct construct from other forms of parental control during emerging adulthood. *Journal of Adolescence, 35*(5), 1177-1190.

Padilla-Walker, L. M., Nelson, L. J., Madsen, S. D., & Barry, C. M. (2008). The role of perceived parental knowledge on emerging adults' risk behaviors. *Journal of Youth and Adolescence, 37*(7), 847-859.

Pancer, S. M., Hunsberger, B., Pratt, M. W., & Alisat, S. (2000). Cognitive complexity of expectations and adjustment to university in the first year. *Journal of Adolescent Research, 15*(1), 38-57.

Perilloux, C., Fleischman, D. S., & Buss, D. M. (2008). The daughter-guarding hypothesis: Parental influence on, and emotional reactions to, offspring's mating behavior. *Evolutionary Psychology, 6*(2), 217-233.

Pittman, L. D., & Richmond, A. (2008). University belonging, friendship quality, and psychological adjustment during the transition to college. *The Journal of Experimental Education, 76*(4), 343-362.

Pritchard, M. E., Wilson, G. S., & Yamnitz, B. (2007). What predicts adjustment among college students? A longitudinal panel study. *Journal of American College Health, 56*(1), 15-22.

Repetti, R.L., & Wood, J. (1997). Effects of daily stress at work on mothers' interactions with preschoolers. *Journal of Family Psychology, 11,* 90-108.

Restifo, K., & Bögels, S. (2009). Family processes in the development of youth depression: Translating the evidence to treatment. *Clinical Psychology Review*, *29*(4), 294-316.

Rice, F., Harold, G., & Thapar, A. (2002). The genetic aetiology of childhood depression: a review. *Journal of Child Psychology and Psychiatry*, *43*(1), 65-79.

Rote, W. M., & Smetana, J. G. (2015). Beliefs about parents' right to know: Domain differences and associations with change in concealment. *Journal of Research on Adolescence*, *26*(2), 334-344.

Roth, M. A., & Parker, J. G. (2001). Navigating the Minefields of Adolescent Social Triangles: Adolescents' reactions to their friends' friends and romantic partners. In *biennial meetings of the Society for Research on Child Development, Minneapolis*.

Rueter, M. A., Scaramella, L., Wallace, L. E., & Conger, R. D. (1999). First onset of depressive or anxiety disorders predicted by the longitudinal course of internalizing symptoms and parent-adolescent disagreements. *Archives of General Psychiatry*, *56*(8), 726-732.

Russell, S. T., Franz, B. T., & Driscoll, A. K. (2001). Same-sex romantic attraction and experiences of violence in adolescence. *American Journal of Public Health*, *91*(6), 903-906.

Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, *57*(3), 316 - 331.

Sax, L., Bryant, A., & Gilmartin, S. (2004). A longitudinal investigation of emotional health among male and female first-year college students. *Journal of The First-Year Experience & Students in Transition*, *16*(2), 39-65.

Saxbe, D. E., Adam, E. K., Schetter, C. D., Guardino, C. M., Simon, C., McKinney, C. O., & Shalowitz, M. U. (2015). Cortisol covariation within parents of young children: Moderation by relationship aggression. *Psychoneuroendocrinology*, *62*, 121-128.

Saxbe, D., & Repetti, R. L. (2010). For better or worse? Coregulation of couples' cortisol levels and mood states. *Journal of personality and social psychology*, *98*(1), 92 – 103.

Schoebi, D. (2008). The coregulation of daily affect in marital relationships. *Journal of Family Psychology*, *22*(4), 595-604.

Seidman, E., & French, S. E. (2004). Developmental trajectories and ecological transitions: A two-step procedure to aid in the choice of prevention and promotion interventions. *Development and Psychopathology*, *16*(04), 1141-1159.

Shulman, S., Tuval-Mashiach, R., Levran, E., & Anbar, S. (2006). Conflict resolution patterns and longevity of adolescent romantic couples: A 2-year follow-up study. *Journal of adolescence*, *29*(4), 575-588.

Silverberg, S. B., & Gondoli, D. M. (1996). Autonomy in adolescence: A contextualized perspective. In G. Adams and T. Gullotta (Eds.) *Psychosocial development during adolescence: Progress in developmental contextualism* (pp. 12-61). Thousand Oaks, CA: Sage.

Singer, J.D., & Willett, J.B. (2003). Applied longitudinal data analysis: modeling change and event occurrence, 1st ed. New York, NY: Oxford.

Smith, L. E., Hong, J., Seltzer, M. M., Greenberg, J. S., Almeida, D. M., & Bishop, S. L. (2010). Daily experiences among mothers of adolescents and adults with autism spectrum disorder. *Journal of autism and developmental disorders*, *40*(2), 167-178.

Starr, L. R., & Davila, J. (2008). Differentiating interpersonal correlates of depressive symptoms and social anxiety in adolescence: Implications for models of comorbidity. *Journal of Clinical Child & Adolescent Psychology*, *37*(2), 337-349.

Steinberg, S. J., & Davila, J. (2008). Romantic functioning and depressive symptoms among early adolescent girls: The moderating role of parental emotional availability. *Journal of Clinical Child & Adolescent Psychology*, *37*(2), 350-362.

Stice, E., Ragan, J., & Randall, P. (2004). Prospective relations between social support and depression: differential direction of effects for parent and peer support?. *Journal of Abnormal Psychology*, *113*(1), 155 - 159.

Tao, S., Dong, Q., Pratt, M. W., Hunsberger, B., & Pancer, S. M. (2000). Social support relations to coping and adjustment during the transition to university in the People's Republic of China. *Journal of Adolescent Research*, *15*(1), 123-144.

Thapar, A., Collishaw, S., Pine, D. S., & Thapar, A. K. (2012). Depression in adolescence. *The Lancet*, *379*(9820), 1056-1067.

Tsai, K. M., Telzer, E. H., & Fuligni, A. J. (2013). Continuity and discontinuity in perceptions of family relationships from adolescence to young adulthood. *Child Development*, *84*(2), 471-484.

Urry, S. A., Nelson, L. J., & Padilla-Walker, L. M. (2011). Mother knows best: Psychological control, child disclosure, and maternal knowledge in emerging adulthood. *Journal of Family Studies*, *17*(2), 157-173.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063.

Wilson-Shockley, S. (1995). Gender differences in adolescent depression: The contribution of negative affect. Unpublished master's thesis. University of Illinois at Urbana-Champaign, Champaign, IL.

Wiseman, H., Mayseless, O., & Sharabany, R. (2006). Why are they lonely? Perceived quality of early relationships with parents, attachment, personality predispositions and loneliness in first-year university students. *Personality and Individual Differences, 40*(2), 237-248.

APPENDIX A

TABLES 1-6

Table 1.

Descriptive statistics of key variables ($N = 88$).

	1	2	3	4	5	6	7
1. Negative Affect	**.17**	-.15	.53***	.35**	.01	-.07	.04
2. Positive Romantic Emotionality	-.13	**.37****	-.18^{+}	-.20^{+}	.36**	.09	.20^{+}
3. Negative Romantic Emotionality	.42***	-.32**	**.64****	.45***	.15	-.10	-.20
4. Degree of Conflict	.34**	-.41***	.63***	**.46****	.14	.04	-.17
5. Time Spent Together	-.18^{+}	.38***	-.03	.01	**.55****	-.05	-.14
6. Relationship Duration	.07	.15	.06	-.07	-.08	**.94****	.00
7. Parent Education	.03	-.03	-.17	-.12	-.11	.14	**.51****
Mean	2.06 (2.40)[a]	6.22 (6.30)	1.80 (1.96)	1.95 (2.07)	3.85 (4.04)	13.74 (14.16)	1.95 (2.07)
Standard Deviation	0.91 (0.77)	1.11 (1.04)	1.11 (1.20)	0.82 (0.80)	1.65 (1.73)	8.22 (8.52)	0.82 (0.80)
Minimum	1.00 (1.00)	1.60 (1.98)	1.00 (1.00)	1.00 (1.00)	1.00 (1.21)	0.50 (0.50)	1.00 (1.00)
Maximum	5.46 (5.07)	7.00 (7.00)	6.95 (6.17)	4.77 (4.50)	7.00 (7.00)	36.00 (36.00)	4.77 (4.50)

*** $p < .001$, ** $p < .01$, * $p < .05$, $^{+}p < .10$

Note. Males' correlations are above the diagonal, females' below. Means, standard deviations, and min/max values are given for males (and females). Significant mean differences between males and females are indicated by superscript *a*.

Table 2.

Estimates predicting adolescents' own negative affect (N = 88).

Parameter	Coefficient (SE)	*t*-ratio
Fixed Effects		
Male intercept	1.45 (.24)	5.10***
Female intercept	1.59 (.25)	5.34***
Within-Person Effects		
Negative Rom. Emotionality – Male	.26 (.02)	11.90***
Negative Rom. Emotionality – Female	.24 (.02)	10.74***
Positive Rom. Emotionality – Male	-.01 (.02)	-0.65
Positive Rom. Emotionality – Female	.01 (.02)	0.32
Conflict – Male	.23 (.02)	13.82***
Conflict – Female	.20 (.02)	12.01***
Time Together – Male	-.06 (.01)	-5.36***
Time Together – Female	-.04 (.01)	-3.61***
Between-Person Controls		
Rel. Length – Males	-.01 (.01)	-0.37
Rel. Length – Females	.01 (.02)	1.12
Minority Status – Males	.42 (.14)	3.14**
Minority Status – Females	.38 (.13)	2.97**
Parent Education – Males	-.01 (.04)	-0.13
Parent Education – Females	.01 (.04)	0.21
Covariance of NA Residuals	.07 (.03)	2.27*

*** $p < .001$, ** $p < .01$, * $p < .05$

Note. Analyses controlled for within-person growth in negative affect across time. NA = Negative Affect.

Table 3.

Correlations, Means, and Standard Deviations for key variables ($N = 146$).

	1	2	3	4	5	6	7	8	9	10	11
1. PA	--										
2. NA	-.10	--									
3. Time – F	.14	-.04	--								
4. Sat Time – F	.25**	-.33***	.45***	--							
5. Pressure – F	-.08	.31***	.03	-.13	--						
6. Argue – F	-.09	.22**	.15^{+}	.14	.66***	--					
7. Time – P	.13	-.11	.18*	.05	-.06	-.07	--				
8. Sat Time – P	.24**	-.36***	.21**	.72***	-.22**	-.24**	.38***	--			
9. Press – P	-.08	.26**	-.02	-.11	.48***	.33***	.08	-.17*	--		
10. Argue – P	.03	.23**	.02	-.07	.35***	.34***	.10	-.14^{+}	.61***	--	
11. Parent Educ.	.24**	.06	.08	.29**	.05	-.01	-.05	.23**	-.01	.08	--
Mean	4.25 (4.17)	2.10 (2.38)*	4.39 (4.11)	5.14 (4.90)	0.08 (0.09)	0.06 (0.09)	3.28 (3.89)**	4.81 (5.04)	0.17 (0.17)	0.13 (0.17)	4.04 (3.80)
SD	0.99 (1.06)	0.77 (0.90)	1.88 (1.92)	1.25 (1.35)	0.16 (0.18)	0.12 (0.19)	1.81 (1.96)	1.20 (1.30)	0.25 (0.26)	0.25 (0.28)	1.17 (1.55)
Scale Range	1-7	1-7	1-7	1-7	0-1	0-1	1-7	1-7	0-1	0-1	1-8

Note. Means and standard deviations are reported for males (and females). PA = Positive Affect, NA = Negative Affect, Sat = Satisfaction with time spent with, F = Friends, P = Parents.

*** $p < .001$, ** $p < .01$, * $p < .05$. $^{+}p < .10$

Table 4.

Fit indices for stepwise estimation of growth curve for positive and negative affect.

	Positive Affect	Negative Affect
No-Growth Model		
-2LL	16608.142	13914.718
AIC	16626.141	13920.718
BIV	16659.420	13940.356
Linear Growth Model		
-2LL	15307.922	13453.856
AIC	15359.185	13530.636
BIV	15340.119	13502.037
Quadratic Growth Model		
-2LL	15592.432	14004.086
AIC	15669.195	14022.085
BIV	15640.596	14052.266

Note. Because the quadratic models were not retained, the model-building process ceased thereafter and no cubic models were estimated.

Table 5. Unstandardized parameter estimates for (a) no-growth and (b) linear growth models predicting change in Positive Affect across the transition to college, and (c) within- and between-person predictors (N = 146).

	No Growth	Linear	Linear w Predictors
		Fixed Parameter Estimates	
Level 1 Prediction			
Intercept	4.20***	4.23***	3.73***
Slope	--	-.02***	-.03
Spline	--	.01^{+}	.00
Time Spent – friend	--	--	.04**
Sat. Time – friend	--	--	.11***
Pressure - friend	--	--	.00
Argue – friend	--	--	-.09
Time Spent – parent	--	--	.01
Sat. Time – parent	--	--	.06***
Pressure – parent	--	--	-.09
Argue – parent	--	--	.00
Level 2 Prediction			
Prediction of Intercept			
Time Spent – friend	--	--	.00
Sat. Time – friend	--	--	.17
Pressure - friend	--	--	.46
Argue – friend	--	--	-.49
Time Spent – parent	--	--	.11^{+}
Sat. Time – parent	--	--	-.14
Pressure – parent	--	--	.17
Argue – parent	--	--	-.14
Prediction of Slope (interaction)			
Time Spent – friend	--	--	.00
Sat. Time – friend	--	--	.01
Pressure - friend	--	--	.06
Argue – friend	--	--	-.05
Time Spent – parent	--	--	.00
Sat. Time – parent	--	--	.01
Pressure – parent	--	--	-.02
Argue – parent	--	--	-.03
		Random Parameters	
Intercept	0.78	0.71***	0.52***
Slope	--	.01**	<.01**
Spline	--	.00	.00

***p < .001, **p < .01, *p < .05, ^{+}p < .10

Note. All models control for depressive symptoms, sex, ethnicity, and parent education. Growth models are centered at the transition to college. Within-person predictors are cluster-mean centered; between-person predictors are grand-mean centered.

Table 6. Unstandardized parameter estimates for (a) no-growth and (b) linear growth models predicting change in Negative Affect across the transition to college, and (c within- and between-person predictors (N = 146).

	No Growth	Linear	Linear w Predictors
		Fixed Parameter Estimates	
Level 1 Prediction			
Intercept	2.28***	2.27***	2.10***
Slope	--	.01	.01
Spline	--	-.01	-.02
Time Spent – friend	--	--	.014
Sat. Time – friend	--	--	-.05***
Pressure - friend	--	--	-.04
Argue – friend	--	--	.42***
Time Spent – parent	--	--	.01
Sat. Time – parent	--	--	-.06***
Pressure – parent	--	--	.33***
Argue – parent	--	--	.25***
Level 2 Prediction			
Prediction of Intercept			
Time Spent – friend	--	--	.11*
Sat. Time – friend	--	--	-.17^{+}
Pressure - friend	--	--	1.40**
Argue – friend	--	--	-0.70
Time Spent – parent	--	--	-.03
Sat. Time – parent	--	--	.04
Pressure – parent	--	--	-.17
Argue – parent	--	--	.08
Prediction of Slope (interaction)			
Time Spent – friend	--	--	.00
Sat. Time – friend	--	--	.00
Pressure - friend	--	--	-.05**
Argue – friend	--	--	.00
Time Spent – parent	--	--	.00
Sat. Time – parent	--	--	.00
Pressure – parent	--	--	.04**
Argue – parent	--	--	-.01
		Random Parameters	
Intercept	0.65***	0.62***	0.23***
Slope	--	<.01***	<.01***
Spline	--	<.01***	<.01***

***p < .001, **p < .01, *p < .05, ^{+}p < .10

Note. All models control for depressive symptoms, sex, ethnicity, and parent education. Growth models are centered at the transition to college. Within-person predictors are cluster-mean centered; between-person predictors are grand-mean centered.