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Long-distance dating relationships, relationship dissolution, and college adjustment

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Many college students maintain ties to romantic partners who do not live in the same geographic area (Aylor, 2003; Maguire & Kinney, 2010). These students may experience the transition to college differently than their peers do. Interpersonal relationships during the transition to college, including romantic relationships, may have implications for affect, connection to the university, and health (e.g., Braithwaite, Delevi, & Fincham, 2010; Whitton, Weitbrecht, Kuryluk, & Bruner, 2013). Individuals in long-distance dating relationships (LDDRs) who live far from their partners may experience strain in their relationships and tension between their university and relationship commitments, which may have repercussions for affect and behaviors (Dainton & Aylor, 2001; Ficara & Mongeau, 2000; Maguire, 2007; Sahlstein, 2004). Additionally, the dissolution of LDDRs may introduce both risks and opportunities for emerging adults' adjustment. Although breakups are associated with negative affect (Rhoades, Kamp Dush, Atkins, Stanley, & Markman, 2011; Sbarra & Emery, 2005) and in some cases increased alcohol use (Fleming, White, Oesterle, Haggerty, & Catalano, 2010; Larson & Sweeten, 2012), dissolving an LDDR, and thus removing a strong interpersonal tie that may direct time and attention away from the university setting, may allow college students to increase involvement in their university communities (Dainton & Aylor, 2001; Holt & Stone, 1988). In the current paper, we explore the roles of LDDRs and their dissolution in college student adjustment.

The current paper advances the literature on romantic relationships and romantic relationship dissolution in several ways. First, we focus on LDDRs, which are common in emerging adulthood (Knox, Zusman, Daniels, & Brantley, 2002) and have implications for adjustment (Aylor, 2003; Rohlfing, 1995; Sahlstein, 2004). Second, we focus on both

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potentially positive (positive affect, university activities) and negative (loneliness, alcohol use) outcomes of romantic relationships and romantic relationship dissolution, as has been called for in previous research (Yıldırım & Demir, 2015). Third, we use daily diary data to show how emerging adults' daily location (on- or off-campus) affects the association between romantic relationships and outcomes. Previous research on LDDRs and relationship dissolution has been overwhelmingly cross-sectional, and thus, there is potential for confounding third variables. However, with daily dairy data, each individual can be treated as his/her own control. This method mitigates the potential for confounding variables and allows for stronger inferences to be made about the results (Curran & Bauer, 2011). In addition, daily dairy studies may provide a more accurate record of individuals' affect and behavior than do retrospective studies because this methodology mitigates the potential for memory error (Schroder, Carey, & Vanable, 2003). Thus, in the current study, we use daily diary data to examine how different types of romantic relationship and relationship dissolution impact the day-to-day experiences of college students. In addition to daily diary data, we use longitudinal data to measure relationship changes that occur over the course of months.

Long-Distance Dating Relationships and College Student Adjustment

Many students begin college with a romantic partner, and these partners are frequently separated by considerable geographic distance—about half of college students report a current or prior LDDR (Knox et al., 2002). Although geographic distance between LDDR partners varies substantially, distance limits the amount of in-person interaction between partners. Consistent with past research (Dainton & Aylor, 2001; Ficara & Mongeau, 2000; Maguire & Kinney, 2010), we conceptualize LDDRs as relationships in which it would be difficult for students to see their partners on a frequent basis because partners live outside the local area. Partners in LDDRs interact with their partners in the extremes—either together frequently during visits or working to maintain the relationship during periods of separation (Sahlstein, 2004). Although later in adulthood, geographically close partners may also see each other infrequently, this pattern is uncommon for emerging adults in GCDRs. Emerging adults have more free time than adults (U.S. Bureau of Labor Statistics, 2015), and when attending residential colleges, live within a very short radius of their partners. Thus, emerging adults in GCDRs likely spend a lot of time with their romantic partner, whereas emerging adults in LDDRs must use this time either connecting with their partner via technology or on activities without their partner (Firmin, Firmin, & Lorenzen, 2014).

The relational extremes of LDDRs may introduce additional stressors that make the transition to college more difficult for these students than their peers who are single or in GCDRs (Aylor, 2003; Rohlfing, 1995; Sahlstein, 2004). In particular, strategies for managing relational uncertainty may introduce tension between relationship and campus commitments. Uncertainty Management Theory explains that individuals in LDDRs may experience heightened uncertainty about the future of their relationships, and may act to reduce this uncertainty by spending additional time communicating with their partners and making plans to see them (Dainton & Aylor, 2001; Maguire, 2007; Sahlstein, 2006). This additional attention to relationship maintenance and time spent off campus may make it

difficult for students in LDDRs to commit to university activities and on-campus peer networks.

The tension between relationship and campus commitments for students in LDDRs may have repercussions for college adjustment outcomes, including positive affect, loneliness, participation in university activities, and alcohol use. Additionally, because the location of romantic partners differs from these students' usual location, the day-to-day location of students in LDDRs may be particularly important in determining these outcomes. That is, being on versus off campus may make a bigger difference in the affect and behaviors of students in LDDRs than in that of their single peers or peers in GCDRs. Daily dairy data provides us the ability to examine these day-to-day variations as a function of location. Therefore, Aim 1 of the current paper is to use daily diary data to examine the associations of relationship status (LDDR, single, GCDR) and daily location with positive affect, loneliness, university activities, and alcohol use.

Positive affect

In contrast to the distress that college students in LDDRs face when away from their partner (Guldner, 1996; Maguire, 2007), many individuals in LDDRs report that their time with their partner is marked by excitement and anticipation (Sahlstein, 2004). We hypothesize that students in LDDRs will have less overall positive affect than single students and students in GCDRs. However, we also hypothesize that students in LDDRs will report more positive affect during off-campus days than on-campus days because reunion with a romantic partner will facilitate positive affect, whereas this association will be less pronounced for other students.

Loneliness

Although LDDRs can be as fulfilling as GCDRs (Johnson, Haigh, Becker, Craig, & Wigley, 2008; Van Horn et al., 1997), the limited face-to-face interaction between partners creates challenges. Being in an LDDR is associated with psychological distress, including loneliness and relational uncertainty (Dainton & Aylor, 2001; Ficara & Mongeau, 2000; Maguire, 2007; Sahlstein, 2004). Many individuals in LDDRs report that it takes time to adjust to being alone (Sahlstein, 2004). Thus, we hypothesize that students in LDDRs will be overall lonelier than single students and students in GCDRs. We also hypothesize that students in LDDRs will be lonelier during on-campus days than off-campus days because loneliness may be alleviated by time with their romantic partner, and this association will be less pronounced for other students.

University activities

University activities are important for students' adjustment because they contribute to students' well-being, supportive relationships, sense of belonging, and persistence to graduation (Astin, 1984; Busseri et al., 2010; Moore, Lovell, McGann, & Wyrick, 1998). The tension between commitments to university life and commitments to an LDDR may make students in LDDRs hesitant to become involved in university activities. Frequent visits and communication with a partner, which are important for maintaining LDDRs (Dainton & Aylor, 2001; Holt & Stone, 1988), may limit opportunities for university involvement even

during on-campus days. We hypothesize that students in LDDRs will participate in university activities on fewer days than other students.

Alcohol use

Alcohol use among college students is associated with long-term negative consequences such as alcohol dependence and short-term negative consequences such as car accidents (Lee, Maggs, Neighbors, & Patrick, 2011; Schulenberg & Maggs, 2002). However, alcohol use is also normative among college students, as students may use alcohol to negotiate developmental transitions. For example, students may use alcohol to make social connections or to fulfill desire for experimentation (Dworkin, 2005; Schulenberg & Maggs, 2002). To some extent, drinking alcohol represents social integration into college culture, which may be lacking for students in LDDRs. Overall, students in romantic relationships tend to engage in less problematic alcohol use than other students (Salvatore, Kendler, & Dick, 2014; Whitton et al., 2013). However, it is unknown whether this association differs for students in LDDRs versus GCDRs. Some individuals in LDDRs report that their responsibilities to their romantic partner inhibit their involvement with peers (Sahlstein, 2004), and drinking may be part of such peer involvement. Therefore, we hypothesize that students in LDDRs will drink less than single students and students in GCDRs.

Long-Distance Dating Relationship Dissolution

Romantic relationship dissolution is normative in emerging adulthood (Rhoades et al., 2011), and some emerging adults experience personal growth, or positive life changes, after a romantic relationship dissolution (Marshall, Bejanyan, & Ferenczi, 2013). In particular, many students dissolve their high school romantic relationship during the first year of college, a phenomenon known in the popular press as the ‘turkey drop’ or ‘turkey dump’ because of frequent co-occurrence with the Thanksgiving holiday (Duncan, 2012; Kitchener, 2013). However, relationship dissolution is also associated with increased psychological distress (Boelen & Reijntjes, 2009; Garimella, Weber, & Dal Cin, 2014; Rhoades et al., 2011; Sbarra & Emery, 2005), decreased positive affect (Sprecher, 1999), and decreased physical wellbeing (Eisenberger, 2012; Osler, McGue, Lund, & Christensen, 2008).

Although the dissolution of LDDRs may negatively affect adjustment, dissolving an LDDR may also reduce off-campus ties, allowing students more involvement in their university and more time to devote to social activities on campus. Therefore, the dissolution of LDDRs may be associated with both positive and negative outcomes. Aim 2 of the current paper is to examine the associations of LDDR dissolution and daily location with positive affect, loneliness, university activities, and alcohol use. Thus, we compare students who maintained their LDDRs through their second semester in college, students who experienced LDDR dissolution and are single, and students who experienced LDDR dissolution and are with a new romantic partner. As with Aim 1, we use daily diary data to explore not only differences in affect and behaviors, but how affect differs according to students’ day-to-day location.

Positive affect

Relationship dissolution is associated with decreased positive affect (Sprecher, 1999) and psychological distress (Boelen & Reijntjes, 2009; Garimella et al., 2014; Rhoades et al., 2011; Sbarra & Emery, 2005). The presence of a new partner may facilitate adjustment after relationship dissolution (Yıldırım & Demir, 2015). Thus, we hypothesize that students in ongoing LDDRs will have more overall positive affect than newly single students but not students who have experienced LDDR dissolution and are with a new romantic partner. However, because individuals in LDDRs report that time with their partner is marked by positive affect (Sahlstein, 2004), we also predict that students in ongoing LDDRs will report higher positive affect during off-campus days than on-campus days, and this association will be less pronounced for other students.

Loneliness

Individuals tend to experience negative affect after relationship dissolution, including anger, depression, grief, and sadness (Boelen & Reijntjes, 2009; Garimella et al., 2014; Sbarra & Emery, 2005). Students may experience loneliness after the dissolution of an LDDR (Dykstra & Fokkema, 2007). We hypothesize that students in ongoing LDDRs will be overall less lonely than newly single students but not students who have experienced LDDR dissolution and are with a new romantic partner. We also hypothesize that students in ongoing LDDRs will be lonelier on on-campus days than off-campus days, and this association will be less pronounced for other students.

University activities

Students may find ways to become positively engaged in other activities to cope with the psychological distress of relationship dissolution (Sbarra & Emery, 2005), and university activity participation is associated with feelings of social support among college students (Busseri et al., 2010). In addition, students who have recently experienced LDDR dissolution may have more time for universities activities without relationship commitments such as partner visits (Dainton & Aylor, 2001; Holt & Stone, 1988). Thus, we hypothesize that students in ongoing LDDRs will participate in university activities on fewer days than newly single students but not students who have experienced LDDR dissolution and are with a new romantic partner.

Alcohol use

Young adults tend to increase substance use, including alcohol use, after relationship dissolution (Bachman et al., 1997; Fleming et al., 2010; Magura & Shapiro, 1989; Larson & Sweeten, 2012). Young adults who have experienced relationship dissolution may use substances to ease psychological distress or may replace time previously spent with a romantic partner with substance-using peers, causing their own substance use to increase (Fleming et al., 2010; Larson & Sweeten, 2012). Consistent with this literature, we hypothesize that students in ongoing LDDRs will drink less than newly single students, but not students who have experienced LDDR dissolution and are with a new romantic partner.

In summary, Aim 1 of the current paper is to examine the associations of relationship status and daily location with daily affect (positive affect, loneliness) and behaviors (university

activities, alcohol use). Aim 2 of the current paper is to examine the associations of LDDR dissolution and daily location with positive affect, loneliness, university activities, and alcohol use.

Method

Participants and Procedure

We used data from the {BLINDED}, a longitudinal burst design study of college students at a large, Northeastern university. Each semester for seven consecutive semesters beginning in Fall of their first semester, participants in this study completed a baseline survey and then daily surveys for up to 14 consecutive days immediately following the baseline survey. The current paper used data from Semesters 1 (S1) and 2 (S2).

Eligible students were first-time, traditionally-aged college students who responded to online surveys for seven consecutive semesters beginning in Fall of their first semester. They were also U.S. citizens or permanent residents under 21 years of age who lived within 25 miles of campus. We used a stratified sampling procedure with replacement at S1 to achieve a diverse sample of first-year students with respect to gender and race/ethnicity. Using information provided by the university registrar, we contacted students via a mailed informational letter that included a $5 pre-incentive and a pen. Subsequently we sent an email message with a link to the Semester 1 (S1) Web-based baseline survey. Students consented electronically before completing the study. Students earned $20 each for completing the S1 and S2 baseline surveys, $3 per day for completing each daily survey, and an $8 bonus for completing all 14 daily surveys. To improve response rates, project staff made telephone calls to participants who had not completed the survey. Of the 1135 students that were invited to the survey, a total of 744 participants provided consent and completed the S1 baseline survey, a response rate of 65.6%. Because some participants did not complete the daily diaries, the analytic sample at S1 was 718. Eighty-nine percent of this S1 analytic sample completed the S2 survey. The study was approved by the university's Institutional Review Board and participant confidentiality was protected by a federal Certificate of Confidentiality.

The analytic sample was 51.5% female, aged 16–20 at S1 (M = 18.4 years, SD = 0.4). Participants could identify as more than one race/ethnicity; thus, the sample was 43.9% White/European American, 29.7% Asian/Asian American/Hawaiian/Pacific Islander, 25.5% Hispanic/Latino American, and 21.7% Black/African American. We used one t-test and five Chi-squares to determine whether participants in the analytic sample (n = 718) differed from participants not in the analytic sample (n = 26) on S1 variables. Participants in the analytic sample were more likely to be female (χ^2 = 4.3, p < .05). Groups did not differ on age, race/ethnicity, or relationship status. Groups could not be compared on daily variables (location, positive affect, loneliness, university activities, and alcohol use) because participants who were not in the analytic sample did not complete the daily surveys. In general, 4.9% of single students' days were spent off campus, 5.4% of GCDR students' days were spend off campus, and 9.3% of LDDR students' days were spent off campus.

Measures

Baseline level—Participants responded to the following measures.

Gender: At S1, participants reported their gender as *female* (0) or *male* (1).

Relationship status: At both S1 and S2, participants reported their relationship status from a list of six options. We coded participants who chose *I am not dating anyone right now* as 'single.' Participants who reported that they were casually dating someone, in a serious and committed relationship, living with their partner, engaged, or married, were coded as 'in a relationship.' Participants who were in a relationship also responded to the question, "Does your partner live in the {town name} area?" We coded participants who responded *yes* as in a geographically close dating relationship and participants who responded *no* as in a long distance dating relationship (see Table 1).

LDDR dissolution: At S1 and S2, students who were in a romantic relationship reported on their relationship length. Students who reported being in an LDDR at S1 but not S2 were coded as having dissolved their relationship (LDDR-single). We used reports of relationship length to determine whether students who reported being in a romantic relationship at S1 and S2 were in the same relationship at both semesters. Students who reported being in an LDDR at S1 and S2 and whose relationship length increased between semesters were listed as maintaining the same relationship (ongoing LDDR). Students who reported being in an LDDR at S1 and S2, and whose relationship length decreased between semesters, were listed as having dissolved their LDDRs and transitioned to a new partner (LDDR-new partner; see Table 1). Twenty-three individuals were coded as LDDR-new partner; 13 were in LDDRs, and 10 were GCDRs.

Daily level—Participants responded to the following measures for up to 14 consecutive days following the S1 and S2 baseline surveys.

Weekend day: The survey software recorded the day of the week in which participants were reporting on, typically the day before (i.e., participants reported on their Tuesday affect and behavior the next day on Wednesday, but the survey software recorded the day of week as Tuesday). We coded Monday through Friday as *weekday* (0) and Saturday and Sunday as *weekend day* (1).

Location: Participants responded to the question, "Were you in {name of town}?" with *yes* (1) or *no* (0).

Positive affect and loneliness: We assessed positive affect and loneliness using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Participants responded to the prompt regarding the previous day, "To what extent did you feel the following different emotions and feelings?" Responses were on a five-point Likert scale ranging from *very slightly or not at all* (1) to *extremely* (5) for each of the items. Positive affect was the mean of 10 items (e.g., 'interested', 'proud'). Reliability was acceptable with the current data ($\alpha = .93$). Loneliness was the score on one particular item ('lonely'). Higher scores on each scale indicate greater positive affect and loneliness, respectively.

University activities: Participants responded to the prompt, "From the time you woke up until you went to sleep, how much time did you spend doing the following activities?" (Finlay, Ram, Maggs, & Caldwell, 2012; Lee, 2004). Responses were on a 10-point scale ranging from *did not do* (0) to *10+ hours* (9). Participants' score for university activities was their score on one item, 'attending another campus event or club' (The only campus event or club excluded from this item was the campus' late-night alcohol-alternative programming). University activities was dichotomized into *no university activity participation* (0) and *university activity participation* (1) because the variable was zero-skewed.

Alcohol use: Participants responded to the prompt, "How many drinks of alcohol did you drink? By ONE drink we mean half an ounce of absolute alcohol, for example, one 12 ounce can or bottle of beer or cooler, five ounce glass of wine, or a drink containing one shot of liquor or spirits." Alcohol use was dichotomized into *no drinks* (0) and *one or more drinks* (1) because the variable was zero-skewed.

Analysis Plan

Multilevel modeling is an appropriate data analysis strategy for data with repeated measurement occasions, including daily diary data in which days are nested within individuals. Multilevel modeling accounts for residual error correlation of days (Curran & Bauer, 2011; Singer & Willett, 2003). We conducted the current analyses in SAS Version 9.4 using the MIXED procedure for linear regression for continuous outcomes (positive affect and loneliness) and the GLIMMIX procedure to carry out logistic regression for dichotomous outcomes (university activities and alcohol use). We used maximum likelihood estimation with random intercepts. All participants contributed data to the estimates in the current analyses even if they did not complete all 14 days of data (Singer & Willett, 2003; see Table 1 for descriptives). We conducted multilevel models for each of the four outcomes (positive affect, loneliness, university activities, and alcohol use; see Table 2 for equations).

In the analysis for Aim 1, we used data from the S1 baseline and daily surveys, drawing from the entire analytic sample (n = 718). We modeled three between-person (BP) variables at level two. First, we included gender, a BP, dichotomous variable, as a control. Second, we included BP location, or the individual mean of location, to control for the tendency to be on- or off-campus. Third, we included relationship status. Relationship status was dummy coded so that LDDR was the reference group. We modeled the within-person (WP) variables at level one. First, we included the WP, dichotomous variable for weekend day as a control. Second, we included the WP, dichotomous variable for location on a particular day (on- or off-campus). Third, we included, for daily positive affect and loneliness, the interaction between WP location and relationship status, a BP variable with LDDR as the reference group.

In the analysis for Aim 2, we used data from S2 on the subset of participants who were in an LDDR at S1 (n = 194). The models for Aim 2 were similar to the Aim 1 models. However, these models differed in their relationship status variable. In the Aim 2 models, we represented relationship status according to change in participants' relationship status from S1 to S2. Ongoing LDDR was the reference group.

Results

Aim 1

Analyses for Aim 1 explored associations of relationship status, location, and the interactions between these variables with positive affect, loneliness, university activities, and alcohol use (Table 3). See Table 1 for descriptive statistics of variables in S1 and S2.

Positive affect—WP location (γ_{10}) was significant, indicating that students had less positive affect on days that they were on campus, compared to days when they were off-campus. BP single relationship status (γ_{03}) and BP GCDR relationship status (γ_{04}) were not significant, thus, there was no main effect for relationship status on positive affect. However, in partial support of our hypothesis that this association would be stronger for students in LDDRs than for other students, the interaction between location and single relationship status (γ_{21}) was significant. To better understand this interaction, we conducted follow-up tests of model-adjusted means in SAS. These analyses assessed differences in the predicted mean of positive affect on on-campus versus off-campus days separately for students in LDDRs and single students (see Figure 1). The effect of location was significant for students in LDDRs (standardized $b = .19$ (.06), $p < .01$) but not for single students (standardized $b = -.02$ (.08), $p > .05$). The interaction between location and GCDR (γ_{22}) was not significant, indicating the association between location and positive affect did not significantly differ between students in LDDRs and students in GCDRs.

Loneliness—WP location (γ_{20}) was significant, indicating that students were lonelier on days that they were on campus than on days that they were off campus. We did not find significant BP associations of single relationship status (γ_{03}) or GCDR relationship status (γ_{04}) with loneliness. Thus, there was no main effect of relationship status on loneliness. However, consistent with our hypothesis that this association would be stronger for students in LDDRs, the interactions of location with single relationship status (γ_{21}), and with GCDR relationship status (γ_{22}) were significant. To better understand this interaction, we conducted follow-up tests of model-adjusted means in SAS. These analyses assessed differences in the predicted mean of loneliness on on-campus versus off-campus days separately for students in LDDRs and single students, and separately for students in LDDRs and students in GCDRs (see Figure 1). The effect of location was significant for students in LDDRs (standardized $b = -0.19$ (.07), $p < .01$), when compared to single students, for whom the effect of location was not significant (standardized $b = 0.08$ (.08), $p > .05$). Similarly, the effect of location was significant for students in LDDRs (standardized $b = -0.19$ (.04), $p < .001$) but not for students in GCDRs (standardized $b = 0.09$ (.13), $p > .05$).

University activities—In partial support of our hypothesis that students in LDDRs would participate in university activities on fewer days than other students, BP single relationship status (γ_{03}) was significant, indicating that single students participated in university activities more frequently than students in LDDRs. The odds of single students participating in university activities on a particular day, compared to students in LDDRs, were 1.42. BP GCDR relationship status (γ_{04}) was not significant. WP location (γ_{20}) was significant,

indicating that students were more likely to participate in university activities on days when they were on campus than on days when they were off campus.

Alcohol use—We hypothesized that students in LDDRs would drink less than other students. Contrary to our hypotheses, no relationship status variables were significantly associated with alcohol use.

Aim 2

Analyses for Aim 2 explored associations of LDDR dissolution, location, and the interactions between these variables with positive affect, loneliness, university activities, and alcohol use for the sub-sample of students who had been in LDDRs at S1 (Table 4). Contrary to our hypotheses, the relationship dissolution variables were not significantly associated with positive affect, loneliness, university activities, or alcohol use.

Discussion

The results of the current paper offer evidence that students in LDDRs may have more difficulties adjusting to college than single students. In particular, location (whether students were on or off campus) may play a greater role in daily affect for students in LDDRs than for single students. However, we did not find differences in alcohol use by relationship status. Additionally, LDDR dissolution was not associated with college students' adjustment. These findings have implications for developmental understanding of LDDRs in emerging adulthood.

Long-Distance Dating Relationships and Adjustment

In some respects, our findings highlight the similarities between individuals in LDDRs and their peers who are single or in GCDRs during the first year of college. There were no main effects for relationships status on average positive affect or loneliness. This finding contrasts with previous research showing that being in an LDDR is associated with psychological distress (Dainton & Aylor, 2001; Ficara & Mongeau, 2000; Maguire, 2007; Sahlstein, 2004) and suggests that college students in LDDRs may not be at risk for worse affect. However, in contrast to other studies, the current study included interactions of location (on or off campus) with relationship status in the model. Indeed, results highlight the role that location plays in the adjustment of individuals in LDDRs. Location may be an important variable for consideration in future research.

Interactions between relationship status and location revealed that students in LDDRs had more positive affect when they were off campus than on campus, and that students in LDDRs were lonelier when they were on campus than off campus. The current study used a longitudinal methodology that enabled us to go beyond cross-sectional group differences and compare students to themselves on on-campus days versus off-campus days, thus removing the possibility of between person confounding variables. These findings are consistent with previous cross-sectional research showing that students in LDDRs experience distress when they are away from their partner, but positive affect when they are reunited (Guldner, 1996; Maguire, 2007; Sahlstein, 2004). Thus, although college students

in LDDRs may not be at risk for experiencing negative affect overall, they likely still feel stronger ties to off-campus commitments that may influence their daily mood. As a result, students in LDDRs may be more motivated to spend time off campus than their peers, thereby missing opportunities for engagement with peers or campus organizations that are important for student success (Moore et al., 1998; Busseri et al., 2010).

We found that students in LDDRs participated in university activities less often than single individuals, but did not differ from students in GCDRs. Although caution must be taken in interpreting non-significant findings as indicating that differences do not exist, this finding suggests that whether or not one is partnered may be more important for campus involvement than the type of relationship. Similarly, while on campus, students in LDDRs were lonelier than students in GCDRs, but did not differ on positive affect. Some previous literature highlights differences between LDDRs and GCDRs (Dainton & Aylor, 2001; Ficara & Mongeau, 2000; Maguire, 2007; Sahlstein, 2004), whereas other literature finds few differences between LDDRs and GCDRs (Johnson, Haigh, Becker, Craig, & Wigley, 2008; Van Horn et al., 1997). Taken together, our findings support the former literature that suggests there are few differences between LDDRs and GCDRs. However, it is also possible that our power to detect differences between students in LDDRs and students in GCDRs was limited due to the size of these groups.

Previous research has found that students in romantic relationships tend to engage in less problematic alcohol use than other students (Salvatore et al., 2014; Whitton et al., 2013). However, in the current study, there were no significant differences in alcohol use by relationship status. This inconsistency may be explained by our measurement of alcohol use. We conceptualized alcohol use as whether or not students drank on a particular day. Previous research finds that students in romantic relationships engage in less problematic alcohol use, not necessarily alcohol use in general. Thus, it may be that romantic relationship status predicts problem drinking, like binge drinking and alcohol dependency (Whitton et al., 2013), but not daily alcohol use, which may be more normative at this developmental stage.

Long-Distance Dating Relationship Dissolution and Adjustment

Contrary to our hypotheses, students in ongoing LDDRs did not differ on daily affect or behaviors from students who dissolved their LDDRs. There are several possible explanations for these unexpected findings. First, students in LDDRs may be used to spending a majority of their time away from their partner, and thus the pace of their daily routine may not be as disrupted by relationship dissolution as it is for students in GCDRs. Past research shows that women who saw their partner less frequently during their romantic relationship tended to have better adjustment after relationship dissolution than women who saw their partner more frequently (Helgeson, 1994). Another explanation is that students in LDDRs may gain coping skills that enable them to recover quickly from relationship dissolution. Students report learning skills such as independence and patience from their LDDRs (Mietzner & Li-Wen, 2005). Segmentation (focusing on getting work done while apart and on creating good memories while together) may also better prepare students in LDDRs to recover after dissolution because they have learned to focus on the present moment (Sahlstein, 2004). In regards to daily affect, previous research finds that students who have experienced

relationship dissolution have more emotional volatility (Sbarra & Emery, 2005). In light of the current findings, it is possible that students experience emotional volatility (that is, more extreme emotional highs and lows) –but not overall differences in emotional affect– after relationship dissolution.

According to General Strain Theory, individuals may use alcohol to manage negative emotions (Agnew, 1992). We did not find students in ongoing LDDRs to differ from students who dissolved their LDDRs on affect or alcohol use. It may be that LDDR dissolution actually alleviates the loneliness that students in LDDRs experience when they are on campus, and thus, these students do not experience changes in daily affect or alcohol use after LDDR dissolution. In contrast, the negative emotions of GCDR dissolution may be more potent, causing emerging adults to use alcohol (Larson & Sweeten, 2012).

It is important to recognize that romantic relationship dissolution during the college years is normative. It is a time when emerging adults are trying out relationships to find suitable sexual and emotional connections (Connolly & McIsaac, 2009). It may be that emerging adults perceive the college years to be a time to experiment with different romantic partners, and thus, they may be resilient to the effects of relationship dissolution, compared to older individuals (Dykstra & Fokkema, 2007). On the other hand, there is evidence that emerging adults do experience psychological distress after relationship dissolution just like older individuals (Boelen & Reijntjes, 2009; Dykstra & Fokkema, 2007). Relatedly, the normativity of relationship dissolution may mean that its effects on adjustment may be potent but short-lived. Therefore, it is possible such effects were not captured by our measurement strategy, which included a gap of one semester between measurement occasions.

Limitations and Future Directions

The current paper has limitations and areas for future research. First, we compared students in ongoing LDDRs to students who experienced relationship dissolution on affect and behavior, but did not measure the immediate effects of relationship dissolution. That is, the days directly following relationship dissolution may be the most meaningful for changes in affect and behavior. Future research should focus specifically on these immediate effects of relationship dissolution. Second, our relationship status measure came from a baseline survey, whereas our measures of college adjustment came from daily surveys. Although the daily surveys immediately followed the baseline survey, it is possible that a participant's relationship status could change during the 14 daily surveys. Third, the current paper used a college student sample. However, it may be that non-college emerging adults are more affected by relationship dissolution than college emerging adults, because their environment is not filled with potential distractions and peers including new romantic partners, who may alleviate the effects of relationship dissolution (Yıldırım & Demir, 2015). Future research should compare the effects of relationship dissolution on college and non-college emerging adults. Fourth, the current study explored relationship dissolution among younger emerging adults, and emerging adults in LDDRs. Future research should compare the effects of relationship dissolution on younger vs. older emerging adults, and on emerging adults in GCDRs vs. LDDRs. Fifth, time spent off-campus is not necessarily analogous to time spent

with a long-distance romantic partner. There may be times when long-distance romantic partners visited students on campus. Similarly, it is unknown whether days spent off campus were spent with romantic partners, family, or on other activities such as sports teams. Sixth, the S2 group sizes were small relative to the S1 group sizes, which may have affected our ability to find significant interactions in the Aim 2 analyses. Seventh, the effect sizes in the current study were small. Future studies may examine other contextual factors that affect students' adjustment in addition to relationship status. Finally, future research should examine other factors that may moderate adjustment after relationship dissolution, such as who initiates the dissolution, reasons for the dissolution, prior relationship commitment, and characteristics such as mental health and self-esteem (Yıldırım & Demir, 2015).

Conclusion

The current paper contributes to the literature on romantic relationships and relationship dissolution by focusing on LDDRs, considering positive *and* negative outcomes, and utilizing daily diary data. Overall, LDDRs and LDDR dissolution are normative among college students. Daily affect and behavior did not differ depending on whether students dissolved or maintained their LDDRs, suggesting that students may be resilient to LDDR dissolution. Whether students in LDDRs were on or off campus was important for their daily affect. Taken together, these findings suggest that students in LDDRs may have more difficulties adjusting to college than single students, that there are few differences between students in LDDRs and students in GCDRs, and that emerging adults may be resilient to the effects of relationship dissolution.

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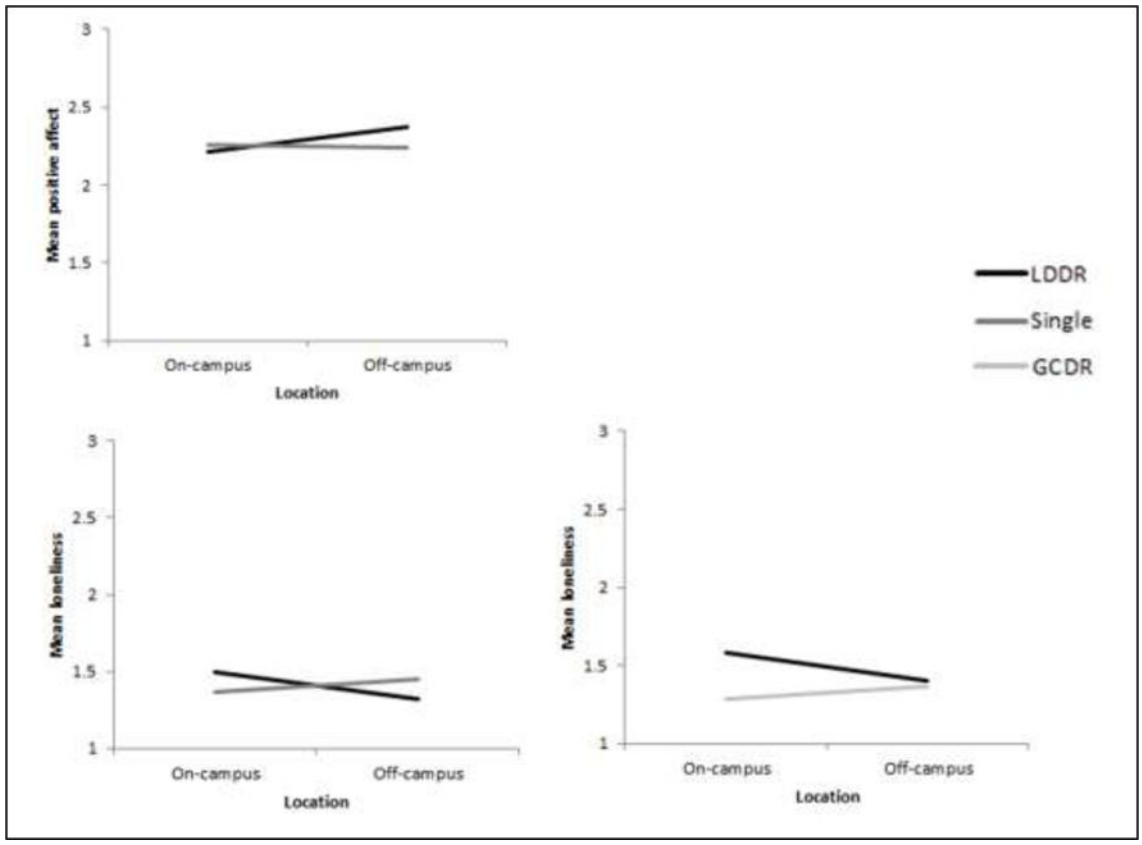

Figure 1.

Significant interactions between location and relationship status for positive affect and loneliness

Note. Values are based on the model-adjusted means.

Table 1

Descriptive Statistics

	Semester 1 (*n* = 718) (*n* days = 10052)	**Semester 2 (*n* = 194) (*n* days = 2716)**
	n (%)	*n* (%)
Female	370 (51.5)	–
Single	442 (61.6)	–
GCDR	55 (7.7)	–
LDDR	218 (30.4)	–
LDDR-single	–	61 (31.4)
LDDR-new partner	–	23 (11.9)
Ongoing LDDR	–	110 (56.7)
	M (*SD*)	M (*SD*)
Positive affect[a]	2.22 (.85)	2.11 (.86)
Loneliness[a]	1.53 (.95)	1.56 (.95)
	n days (%)	*n* days (%)
On-campus	8303 (82.6)	2205 (81.2)
University activities	753 (8.1)	180 (6.6)
Alcohol use	1055 (10.5)	245 (9.0)

Note. GCDR = Geographically close dating relationship. LDDR = Long-distance dating relationship.

[a]Average across days. Semester 2 sample is a subsample of students who were in an LDDR at Semester 1 and responded to the Semester 2 survey.

Table 2

Equations for multilevel models

Model equations for Aim 1 analyses (whole sample)
Level 1:
$S1\ Outcome_{ij} = \pi_{0i} + \pi_{1i}(Weekend\ day_i) + \pi_{2i}(WP\ Location_i) + \varepsilon_{ij}$
Level 2:
$\pi_{0i} = \gamma_{00} + \gamma_{01}(Gender_i) + \gamma_{02}(BP\ Location_i) + \gamma_{03}(BP\ Single_i) + \gamma_{04}(BP\ GCDR_i) + \zeta_{0i}$
$\pi_{1i} = \gamma_{10}$
$\pi_{2i} = \gamma_{20} + \gamma_{21}(BP\ Single_i)^{*} + \gamma_{22}(BP\ GCDR_i)^{*}$
Model equations for Aim 2 analyses (subsample of students in an LDDR at Semester 1)
Level 1:
$S2\ Outcome_{ij} = \pi_{0i} + \pi_{1i}(Weekend\ day_i) + \pi_{2i}(WP\ Location_i) + \varepsilon_{ij}$
Level 2:
$\pi_{0i} = \gamma_{00} + \gamma_{01}(Gender_i) + \gamma_{02}(BP\ Location_i) + \gamma_{03}(BP\ LDDR\text{-}Single_i) + \gamma_{04}(BP\ LDDR\text{-}same\ relationship_i) + \zeta_{0i}$
$\pi_{1i} = \gamma_{10}$
$\pi_{2i} = \gamma_{20} + \gamma_{21}(BP\ LDDR\text{-}Single_i)^{*} + \gamma_{22}(BP\ LDDR\text{-}new\ partner_i)^{*}$

Note.

* These terms were added for positive affect and loneliness, but not for university activities or alcohol use. BP = between-person. WP = within-person. Outcomes are positive affect, loneliness, university activities, and alcohol use. Comparison groups are LDDR for Aim 1 analyses and ongoing LDDR for Aim 2 analyses.

Table 3

Model estimates for Aim 1 analyses (whole analytic sample)

	Model 1a: Positive affect	Model 1b: Loneliness	Model 1c: University activities	Model 1d: Alcohol use
Fixed Effects				
Means				
Intercept (γ_{00})	2.48***	1.31***	−4.01***	−4.30***
Female (γ_{01})	0.07	−0.05	−0.53***	0.07
Location (percent of days spent on-campus; γ_{02})	−0.13	0.03	0.16	−0.17
Single (γ_{03})	−0.13	0.13	0.35*	0.14
GCDR (γ_{04})	−0.13	−0.03	0.19	0.50
Slopes				
Weekend day (γ_{10})	0.08***	0.00	−0.33***	1.70***
On-campus (γ_{20})	−0.25***	0.32***	0.89**	0.60***
On-campus*Single (γ_{21})	0.17**	−0.26***	–	–
On-campus*GCDR (γ_{22})	0.19	−0.27*	–	–
Random Effects				
Level-1 effect (ε_{ij})	0.29***	0.42***	–	–
Level-2 effects Intercept (ζ_{0i})	0.42***	0.48***	1.93***	2.41***

Note.

*$p < .05$

**$p < .01$

***$p < .001$ Gender is coded *1* = male, *0* = female. GCDR = Geographically close dating relationship. Weekend day is coded *1* = weekend day, *0* = weekday. Within-person location is coded *1* = on-campus, *0* = off-campus. University activities is coded *1* = university activity participation, *0* = university activity participation. Alcohol use is coded *1* = one or more drinks, *0* = no drinks. Single and GCDR are dummy coded with LDDR as the reference group. Models 1c and 1d were modeled via a logit equation, and thus, do not provide a residual error term.

Table 4

Model estimates for Aim 2 analyses (subsample of students in an LDDR at Semester 1)

	Model 2a: Positive affect	Model 2b: Loneliness	Model 2c: University activities	Model 2d: Alcohol use
Fixed Effects				
Means				
Intercept (γ_{00})	2.13***	1.89***	−4.60***	−4.56***
Female (γ_{01})	0.12	0.12	−0.46*	−0.17
On-Campus (percent of days spent on-campus; γ_{02})	0.02	−0.56	0.61	0.61
LDDR-single (γ_{03})	−0.04	0.02	0.00	0.07
LDDR-new partner (γ_{04})	−0.12	−0.17	0.81	−0.11
Slopes				
Weekend day (γ_{10})	0.05*	−0.02	0.00	1.57***
On-campus (γ_{20})	−0.15***	0.16**	0.57*	0.49**
On-campus*LDDR-single (γ_{21})	0.13	−0.06	–	–
On-campus*LDDR-new partner (γ_{22})	0.20	0.17	–	–
Random Effects				
Level-1 effect (ε_{ij})	0.23***	0.46***	–	–
Level-2 effects Intercept (ζ_{0i})	0.51***	0.43***	2.89***	2.01***

Note.

*$p < .05$

**$p < .01$

***$p < .001$ Gender (Female) is coded *1* = male, *0* = female. Weekend day is coded *1* = weekend day, *0* = weekday. Within-person location (On-campus; $\gamma 20$) is coded *1* = on-campus, *0* = off-campus. University activities is coded *1* = university activity participation, *0* = university activity participation. Alcohol use is coded *1* = one or more drinks, *0* = no drinks. LDDR-single and LDDR-new partner are dummy coded with ongoing LDDR as the reference group. Models 2c and 2d were modeled via a logit equation, and thus, do not provide a residual error term.