Narrative Identity Processes and Patterns of Adjustment Across the Transition to College:
A Developmentally Contextualized Approach

Jennifer Pals Lilgendahl

Haverford College

Kate C. McLean

Western Washington University

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Address correspondence to: Jennifer Pals Lilgendahl, 370 Lancaster Ave., Haverford, PA

19041. Email: jlilgend@haverford.edu

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Link to OSF page for Identity Pathways Project: <https://osf.io/57ax3/>

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Abstract

Narrative identity is a distinct level of personality that is related to psychological adjustment across the life course and is at its height of development during the emerging adult years. The present study was designed to capture a contextualized understanding of how narrative identity processes relate to adjustment during college. Using a four-wave longitudinal design ($n = 437$ participants; $n = 1544$ narratives) and multi-level growth curve modeling, we examined how self-event connections coded from academic and romantic high point and low point narratives reported at the end of the first year were related to trajectories of life satisfaction and mental health assessed four times from the summer before college to the following Fall (sophomore year). We found that positive self-event connections, especially those in romantic high points, were associated with an increase in life satisfaction. In contrast, negative self-event connections in both academic and romantic low points were predicted by higher levels of depression and anxiety and lower levels of life satisfaction prior to the start of college. Methodological and theoretical contributions are discussed in terms of the importance of contextualizing narrative identity in developmental time and context, particularly for gaining a more nuanced perspective on how identity relates to adjustment during a developmental transition.

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The high point in my dating life was one particular date that I went on that was a lot of fun! This guy and I had met in September and had been really good friends since, but in April he asked me out on a date and I said yes. So in the evening, he picked me up and told me that the whole day was going to be a surprise . . . At the time, I was thinking that it was so easy to spend time with him because we were such good friends. I was feeling confused because I wasn't sure that I had any feelings for him past that friendship. But I was definitely feeling happy. This was the high point because it was a lot of fun and made me realize how good it is to give strangers and friends a chance when it comes to dating, for all it is is getting to know them on a deeper level.

From the outset, I felt far from confident in my ability to handle a [college] calculus course. Despite struggling through AP Calculus in high school and doing well only as a beneficiary of a generous curve, I was completely surprised when I placed into Calculus II, where I immediately felt as if I was in over my head. However, after the second midterm, I felt fairly confident, until the exams were graded and returned the following week. And I got a 48%, which although the class average was fairly low and the professor allowed us to redo the questions we got wrong for half credit, completely shattered my initial ideas of majoring in economics, since struggling that much in Calc II would only bode harmful for my performance in Calc III and more advanced courses. I felt like I had nothing to cling to (academically) at that time . . . It completely turned me away from majoring in economics, and almost resulted in me transferring to a school with a conventional business program.

These narratives represent a snapshot of narrative identity development - the process of developing an identity through forming meaningful connections between past experiences and the self (Habermas & Bluck, 2000; McAdams & McLean, 2013; McLean, 2008; Pasupathi, Mansour, & Brubaker, 2007 – during an important life transition, the transition to college. These two students are both actively connecting emotionally significant moments from their first year of college to their understanding of themselves, but they are doing so in very different ways, which may have important implications for their unique trajectories of psychological adjustment across the college transition.

Although research linking narrative identity and well-being is well-established (Adler, Lodi-Smith, Philippe, & Houle, 2016), much of this work has been done at a broad and de-contextualized level of analysis, without taking advantage of the rich content revealed in personal narratives. Thus, responding to calls for a more contextualized approach (Dunlop, 2015), we examined two important contexts in college students' lives – romance and academics – to understand how narrative identity processes that are contextually embedded in the lived experience of the college transition relate to patterns of adjustment unfolding over time. Further, because narrative processes are particularly useful in managing disruption (Bruner, 1990), we expect that during transitions, narrative identity processes will be highly active and engaged with how new experiences within these important contexts both inform and transform identity. Our goal in the current study was to apply this novel theoretical and methodological contextual perspective by following college students from the summer before the start of college to the fall of sophomore year, examining the relation between narrative identity processes coded from academic and romantic high and low point narratives reported at the end of the first year to patterns in two aspects of adjustment -- life satisfaction and mental health. As we elaborate further below, we took an exploratory and comparative modeling approach to examine the value of using more aggregated vs. contextualized indicators of narrative identity processes for understanding identity development and adjustment during a developmentally significant life transition.

Life Events, The Transition to College, and Adjustment: A Narrative Identity Approach

How do major life events such as the transition to college tend to affect adjustment and well-being? Somewhat counterintuitively, research long suggested that on

average, major life events tend to have only minimal and temporary affects (Luhmann, Hoffman, Eid, & Lucas, 2012). However, more recent efforts to use large-scale longitudinal studies have led to at least four important conclusions that inform our perspective on adjustment during the transition to college. First, some events may have more substantial effects on well-being than others (Luhmann et al., 2012). With respect to the transition to college, there is good reason to assume that it is a highly important developmental transition with the potential for long-term effects on adjustment (Azmitia, Syed, & Radmacher, 2013). For example, research has documented mean-level increases in stress and depression during the transition (e.g., Conley et al., 2014; Wintre & Yaffe, 2000), which could result in behaviors that have lasting effects on life trajectories (e.g., substance use, poor study habits, unhealthy relationships), or even dropping out (Conley et al., 2014; Credé, & Niehorster, 2012). Further, because the transition coincides with emerging adulthood when identity development is central (Arnett, 2000), events occurring this transitional period of life have the added significance of fueling identity exploration and impacting the emerging adult's developing sense of self, with potential positive or negative consequences for adjustment. Accordingly, the current study also introduces the more specific and comparative question of *how different types of events that take place in the process of going through the transition to college* (i.e., academic and romantic high points and low points) may relate to patterns of adjustment in different ways, depending on how they are interpreted in relation to identity.

Second, while it has been established that some major life events show normative patterns of change in well-being as a result of the occurrence of an event, longitudinal

studies also show that there are substantial *individual differences* in how individuals adjust to a major life event (Hudson, Lucas, & Donnellan, 2019). This may be especially true for an event like the transition to college, which, as noted above, is emotionally complex, with positive and negative elements, and occurs during a developmentally turbulent time (Azmitia et al., 2013). It is important to address what factors may explain individual differences in how people adjust, and during emerging adulthood, identity processes are likely to play a role. For example, Azmitia et al (2013) found that changes in identity synthesis co-occurred with change in adjustment during the transition to college. As we elaborate below, we expect that individual differences in the *subjective interpretations* of events embedded in the transition experience are critical for both identity and adjustment.

Third, it is important to examine different types of well-being and adjustment. A recent meta-analysis showed that lasting effects of major life events are more pronounced for cognitive well-being (i.e., life satisfaction) than affective well-being (Luhmann et al., 2012). In the case of the transition to college, both life satisfaction and poor mental health were expected to be critical. Indeed, depression and anxiety are common problems in college students, especially during the first-year transition (e.g., Bayram & Bilgel, 2008; Wintre & Yaffe, 2000), and as students navigate their new college lives, their assessment of life satisfaction is important, as it reflects in part how their experience is matching up to their expectations, goal-progress, etc. Fourth, when considering the impact of a life events on well-being, pre-event levels of well-being must also be taken into account (Luhmann, Lucas, Eid, & Diener, 2013; see also Azmitia et al., 2013). In

the current study, we examine both how narrative identity processes related to patterns of change in adjustment over time *and* were predicted by pre-college levels of adjustment.

In sum, we argue that a major life event like the transition to college will have consequences for adjustment and will be experienced differently by different individuals, with identity development being a key factor in those differences. We argue next that a contextualized narrative identity approach, which focuses on key emotional experiences occurring during the transition and the self-defining meaning made from them, may help to explain individual differences in patterns of adjustment during the transition.

Narrative Identity and Adjustment During a Transition: Need for a More Contextualized Approach

The majority of work in the field of narrative identity takes a relatively decontextualized approach – either by aggregating codes of specific scenes (e.g., life story low point and high point, self-defining memories), or assessing single narratives. The aggregation approach has been useful for creating indicators of general, trait-like narrative patterns that have served as robust predictors of important outcomes, such as in establishing the incremental predictive validity of narrative identity in relation to well-being (Adler et al., 2016), and the use of single event narratives has also provided important data on development and adjustment. However, neither approach allows for a rich and comparative understanding of the various kinds of events that are important to adjustment. Indeed, narrative identity processes have been argued to be inextricably interconnected with the content of the life events being narrated (e.g., Galliher, McLean, & Syed, 2017), and emerging evidence is showing that individuals vary in the ways in which they narrate particular events – that is, there is intra-individual variability in

narrative (McCoy & Dunlop, 2016; McLean, Pasupathi, Greenhoot, & Fivush, 2017).

Thus, recent theorizing has emphasized the value of taking a more contextualized approach to narrative identity (Dunlop, 2015).

Following these recent developments, one aim of the current research is to examine more systematically how variation in qualities of the events being narrated matters for the way *autobiographical reasoning* is related to adjustment.

Autobiographical reasoning is a broadly defined process construct in the narrative identity literature that refers to narrating past experiences in ways that form meaningful connections between those past experiences and one's sense of self or identity in the present (Habermas & Bluck, 2000). Many narrative qualities have been coded that capture interrelated aspects of autobiographical reasoning, including meaning-making, exploratory processing, growth, and self-event connections (McLean et al., 2019). We chose to focus on self-event connections in this study, both because the focus on *self*, specifically, is expected to be especially developmentally relevant in emerging adults, and also because self-event connections are the only form of autobiographical reasoning in which a clear coding distinction has been made between *positive and negative*. This distinction in valence is expected to be critical for understanding patterns of adjustment during the first year of college, when students are likely to be highly self-evaluative in the context of an abundance of new experiences (e.g., Friedlander, Reid, Shupak, & Cribbie, 2007). Indeed, positive and negative self-event connections may relate to different indicators of adjustment in distinct ways, adding to the importance of including both in the current study (Banks & Salmon, 2013; Merrill, Waters, & Fivush, 2016). However, these studies were not longitudinal, nor did they tailor the assessment of self-event

connections within the context of the college transition. We now turn to the specific ways in which we contextualized our study of self-event connections and adjustment during the transition to college.

The Context of Event Valence. A growing number of studies are suggesting that there are important differences in the role that low and high point narratives play in narrative identity and adjustment (Cox & McAdams, 2014; Lilgendahl & McAdams, 2011; McLean & Lilgendahl, 2008; Merrill, Waters, & Fivush, 2016). First, some studies suggest that low points may be particularly important to well-being compared to high points, with low points generating a greater range of autobiographical reasoning outcomes (negative meaning to positive meaning) that relate to well-being (Cox & McAdams, 2014), and also generating more growth-oriented and transformative forms of meaning than high points due to the deeper and more exploratory processing they stimulate (Lilgendahl & McAdams, 2011). However, a few studies importantly suggest that the role of high and low points may depend on developmental stage. McLean and Lilgendahl (2008) found that when emerging adults who used high points to understand their identity, this related to a greater sense of personal growth, whereas for older adults it was low points serving the identity function that related to personal growth. Similarly, Merrill et al (2016) found that positive self-event connections in positive events but not negative events were related to identity exploration in a sample of emerging adults. These findings are consistent with a new conceptual framework for thinking about identity development and event valence. Reviewing the substantial literature on the role of low points and difficult events as providing opportunities for growth and development (e.g., Pals, 2006, King et al 2000, Lilgendahl & McAdams, 2011; Lilgendahl, Helson & John,

2013), Lilgendahl (2015) noted that much of that research was conducted with mid-life adults. Whereas autobiographical reasoning about low points may be especially important for midlife adults, after they have established identities and experienced challenges to those identities, autobiographical reasoning about positive events may be especially important during emerging adulthood when a mature adult identity is first developing (Arnett, 2000), which was a central reason for our comparative analysis.

The Context of Life Domain. There has been a recent push to use a narrative approach to understand identity construction within specific, identity-relevant life domains and contexts, such as love life (Dunlop et al, 2018), parenting (Dunlop et al, 2017), and ethnicity (Syed & Azmitia, 2010), because it is becoming clear that narrative identity processes vary across narratives drawn from distinct identity domains (McLean, Syed, & Shucard, 2016). Indeed, this movement in the narrative identity literature follows the domain-specific approach that has long been taken in the Eriksonian, identity-status approach to identity, which relies upon quantitative scales to assess identity exploration and commitment across several identity relevant domains in emerging adulthood (e.g., Schubach, Zimmermann, Noack, & Neyer, 2017). However, no studies of which we are aware from either tradition of identity development has simultaneously and separately assessed identity in multiple domains in order to compare and evaluate their independent contributions to explaining differences in adjustment. We examined the domains of academics and romance, because they correspond to two of the fundamental activities of adult life, “love and work”, which have been described as critical to understanding optimal identity development and psychological functioning, and are interrelated tasks during emerging adulthood (Arnett, 2000; Seiffge-Krenke, Luyckx, & Salmela-Aro,

2014). Further, academic activities and romantic exploration are two common activities of college life and were therefore expected to provide a rich set of emotional experiences, both high and lows, that would be likely to generate self-evaluative processes of autobiographical reasoning during the first year of college and relate closely to adjustment.

The Context of Retrospective Timeframe. The standard approach in narrative identity research is to impose minimal constraints on the retrospective timeframe from which important memories are selected to best capture the subjective evaluation of one's life. However, in the present study, we intentionally constrained the retrospective timeframe in order to capture experiences that were critical to the developmental transition that our participants were actively experiencing: *the first year of college*. Given that the transition to college is an emotionally turbulent and exciting time that can challenge and transform identity, we reasoned that the narrative processing of events actually taking place during this period would have important implications for self-definition and changes in adjustment. It is important to note that this approach represents an important departure from traditional narrative identity research in that the events selected for narration are quite recent and may or may not ultimately become integrated into an enduring version of the life story. Rather, our intention was to capture a dynamic, ongoing developmental process as it is unfolding over time during a critical life transition (see McLean & Pasupathi, 2012).

The retrospective timeframe of the first year of college was expected to be especially important for assessing relations between narrative identity processes and patterns of change over time in adjustment. This is because it is very unusual for

longitudinal research on narrative identity to be able to include an assessment of adjustment prior to the occurrence of the events themselves. Typically, narratives are collected and narrative qualities are coded and then used to predict change on an outcome variable going forward, but the events themselves were in the past, well prior to the initiation of the study (e.g., King, Scollon, Ramsay, & Williams, 2000). A few studies deviate from this typical approach and point to the value of a more constrained and standardized timeframe. For example, Adler (2012) showed that increases in agency coded from narratives of psychotherapy sessions predicted changes in well-being from pre-therapy levels. This study provides a good example of the value of using narration of recent experiences when examining a period of active transition and change. Though examining changes ego development rather than changes in adjustment, another longitudinal study is also instructive regarding the value of pre-event, baselines measures. Specifically, Lilgendahl, Helson, and John (2013) examined how narratives identity processing in narratives of difficult life events reported at age 52 relates to changes in ego development from age 43 to age 61. Importantly, the narratives were only predictive of change if the event that was narrated took place after age 43 and therefore within the developmental window of time captured by the longitudinal design.

The Current Study

The current study utilized data from the Identity Pathways Project, a narrative-intensive longitudinal study of college students from two campuses in the United States. Specifically, we used linear growth curve modeling to assess how initial levels and patterns of change in both life satisfaction and mental health (4 waves) related to autobiographical reasoning captured during the first year of college. Narratives of

academic and romantic high and low point experiences from the first year were collected at the end of the first year (Wave 3) and coded for positive and negative self-event connections. We expected these narratives to be indicators of ongoing narrative identity processes actively taking place during the transition to college and to therefore be closely tied to patterns of adjustment across the transition. Adjustment levels prior to the start of college (Wave 1) offered a baseline assessment prior to the transition to college taking place, and narratives at the end of the first year offered an assessment of narrative identity processes that had been initiated since the start of college. Thus, we were in a position to see how narrative identity processes were associated with both stable and changing aspects of adjustment – those initial levels of adjustment that students brought with them to the college transition and the individual patterns of change that unfolded over the course of year.

As we have argued, the narrative methods used in this study are “developmentally contextualized” – that is, they were tailored to the contexts that are developmentally significant in college students’ lives and identities – academics and romance. We examined several models that evaluated positive and negative self-event connections operationalized as correlates and predictors of adjustment at different levels of contextualization, from the fully aggregated (composited across all four narratives), to contextualized by emotional valence (high point vs. low point), to contextualized by life domain (academic vs. romantic), to the most contextualized, treating each individual narrative separately. By comparing these different models in an exploratory fashion, our goal was to begin to shed light on the question of whether greater distinctions or greater aggregation provide more informative value for evaluating the relationship between

narrative identity processes and adjustment. Additionally, it is important to note that in comparing our models our intention was not to examine the effect of the events themselves but rather the narrative construction of the events, as captured at the end of the school year, as part of the broader process of narrative identity development taking place during the transition to college. Indeed, the very selection of events as one's academic and romantic high and low point for the year is itself part of a subjective, constructive process as opposed to an objective indicator of an event.

Although our approach is largely exploratory, given the novelty of the study, we went into the analyses with some broad hypotheses and guiding questions¹. First, we hypothesized that the formation of positive self-event connections from emotional high points would be associated with increases in life satisfaction, and that the formation of negative self-event connections from emotional low points would be associated with increases in feelings of depression and anxiety. Second, we hypothesized that both distinctions would be valuable and informative – that both academic and romantic experiences would contribute independently to changes in adjustment, and that both high points and low points would be uniquely important as well. More speculatively, we considered that romantic experiences might be more connected to positive changes in adjustment, as an exciting new area of identity exploration given the social independence of college, and that academic experiences might be more connected to poor mental health and negative changes in adjustment, as the challenges of adjusting to the greater academic rigor of college can be a difficult and anxiety-provoking aspect of the college transition.

Finally, it is important that we examined relations of our narrative identity indicators with adjustment both without any controls and controlling for the trait of neuroticism. In addition to being a strong predictor of life satisfaction (Lachmann et al., 2017), symptoms of depression and anxiety (Roelofs et al., 2008), and college adjustment (Klimstra et al., 2018), neuroticism is also the one trait of the Big Five that is most consistently correlated with narrative identity (Lilgendahl & McAdams, 2011; McAdams et al., 2004; Raggatt, 2004), especially indicators that emphasize emotionally valenced interpretations of experiences as do positive and negative self-event connections. Given these overlapping relations, we thought it was important to report on models both without and with neuroticism included as a control variable.

Method

Each of the samples were collected under IRB approval at the following institutions: Campus 1: Haverford College (proposal entitled, “The Identity Pathways Project -- A Longitudinal Study of Narrative Identity Processes, Contexts, and Outcomes During College”); Campus 2: Western Washington University 14-038: Identity Pathways Project.

Participants and Procedure

Participants included in the current analyses ($N = 437$) were drawn from the Identity Pathways Project (IPP), an ongoing longitudinal study of college student development involving students from two institutions, a small, private, highly selective liberal arts college in the Northeastern United States (Campus 1) and a medium-sized, public, moderately selective state university in the Northwestern region of the United States (Campus 2). The general design of IPP is a multi-wave online survey study in

which participants are surveyed in the summer before college begins (Wave 1), two more times during freshman year, Winter (Wave 2) and Spring (Wave 3), three times a year for each year of college after that, Fall, Winter, and Spring (Waves 4-12) and a one-year post-graduation follow-up (Wave 13). The current analyses involved data from Waves 1-4.

The samples at each institution were recruited over the summers to complete Wave 1 prior to starting college in a staggered fashion (recruited between 2013 – 2015 with three different starting points across the two campuses – 2013, 2014, and 2015), with an aim of recruiting approximately 300 participants per campus. For Campus 1, all members of the entering classes of 2013 and 2015 were invited to participate in IPP. In the Summer of 2013, 48% ($N = 159$) of the entering class participated. In the Summer of 2015, 45% ($N = 157$) of the entering class participating. The target sample size (300 from each campus) was largely determined by funding and logistical constraints, given that we paid participants \$20-25 per survey (with a total of 13 surveys over 5 years for the full study design) and extensive narrative data was collected at each survey that requires narrative coding.

For Campus 2, there were approximately 3000 students in the two entering classes from which we recruited for this study (2014 and 2015). Every student who went to the summer orientation event (90% attendance rate) received a flyer about the Identity Pathways Project. After that event, recruitment proceeded via email. In the Summer of 2014, a randomly selected sample of 400 students (gender balanced) from the entering class were sent an invitation to participate in the study via email. Once 150 people completed the survey, we stopped recruiting participants. A similar procedure was used

in the summer of 2015, except that an attempt was made to over-sample underrepresented students interested in STEM fields (for project goals not pertaining to this paper). An email invitation was sent to 500 students, which was a combination of randomly selected students, and non-Asian minority students who expressed interest in STEM. This resulted in 173 participants from this class. In sum, across the two campuses, a total of 638 participants completed the Wave 1 survey in the summer prior to college ($n = 315$ for Campus 1 and $n = 323$ for Campus 2).

For the full Wave 1 sample, 35% ($n = 221$) identified as male and 63% ($n = 405$) identified as female (eight wrote in alternative responses for gender and five were missing). For race/ethnicity, participants were allowed to select all applicable response options and write in their own response if “other” was selected; 75% selected white, 6% selected Black/African-American, 10% selected Latino/a, 18% selected Asian, 2% selected Native American, and 1% selected “other”. Additionally, 13% selected more than one racial category, suggesting a mixed heritage. While this overall pattern was quite similar across campuses, there were significant differences in the proportions selecting white (Campus 1 = 69%, Campus 2 = 80%) and Black/African-American (Campus 1 = 9%, Campus 2 = 3%). This pattern is generally consistent with both institutional and regional demographic differences between the two campuses.

Socioeconomic status (SES) was assessed with household income, father’s educational level, and mother’s educational level. As expected and consistent with institutional differences, the campuses differed on all three indicators of SES. Household income was assessed with nine categories, with 1 = less than \$10,000 a year to 9 = over \$200,000 a year. The mode for both campuses was \$90,000-\$120,000 and the range for

both campuses was 1-9; however, for Campus 1, 43% fell below \$90,000 and 36% fell above \$120,000, whereas for Campus 2, 60% fell below \$90,000 and 21% fell above \$120,000. Further, the most extreme disparity was in the highest category of over \$200,000, with 20% for Campus 1 and 5% for Campus 2. For Campus 1, 45% of mothers had a master's degree or higher, 33% had a 4-year college degree, and 21% had some college or less. Similarly, 52% of fathers had a master's degree or higher, 23% had a 4-year college degree, and 22% had some college or less. In contrast, for Campus 2, 22% of mothers had a master's degree or higher, 26% had a 4-year college degree, and a 53% had some college or less. Similarly, 22% of fathers had a master's degree or higher, 28% had a 4-year college degree, and 50% had some college or less.

The 437 participants (53%, $n = 230$ for Campus 1; 47%, $n = 207$ for Campus 2) included in the current analyses were those who, in addition to having completed the adjustment measures at Wave 1, also reported at least one of the narratives collected at Wave 3. Of the 437 participants, 345 (79%) completed all four waves included in the current analyses, 76 (17%) completed three waves (Waves 1, 2, and 3 or Waves 1, 3 and 4), and 16 (4%) completed Waves 1 and 3. This sample was comparable to the full Wave 1 sample in terms of demographics.

Attrition analyses were complicated by the fact that participation patterns in the sample involved every possible combination of waves from 1-4, including combinations not included in the current analyses because they skipped Wave 3 (e.g., those who completed Waves 1, 2, and 4). Thus, in order to maximize clarity for the present study, we contrasted those who completed Wave 1 only ($n = 93$) with those who completed Wave 3 and were therefore included in our study ($n = 437$). For gender, a chi-square

analysis ($X^2 = 6.96$, $df = 1$, $p = .008$; $\Phi = .12$) showed that females were disproportionately more likely to be included in the current sample than males, whereas males were more likely to complete Wave 1 only ($ASR = 2.6$). There were no differences for race/ethnicity or indicators of socioeconomic status. On the Big Five personality traits, those who completed Wave 3 scored higher on conscientiousness at Wave 1 ($M = 3.66$; $SD = .63$) than those who completed Wave 1 only ($M = 3.48$; $SD = .63$), $t = -2.51$, $p = .012$ (Cohen's $d = .29$). There were no differences between the groups on well-being measures at Wave 1. Finally, for campus, there was a marginally significant trend ($X^2 = 3.5$, $df = 1$, $p = .06$; $\Phi = .08$), such that students at Campus 1 were somewhat more likely to complete Wave 3 ($ASR = 1.9$) and students at Campus 2 were somewhat more likely to complete Wave 1 only ($ASR = 1.9$). In sum, those who continued with the longitudinal study long enough to be included in the current analyses were more conscientious, more likely to be female, and from Campus 1 than those who completed Wave 1 only. However, as noted by the reported effect sizes (Φ and Cohen's d), these effects were quite small in magnitude and were therefore not a significant concern for the current analyses.

Measures

Adjustment. We assessed adjustment with two scales, the Satisfaction with Life Scale (SWLS; Diener, et al., 1985) and the Depression and Anxiety Symptoms Scale (DASS; Lovibund & Lovibund, 1995), each of which were included at all four waves included in this study. The SWLS is a five-item scale that measures general life satisfaction with items such as “in most ways my life is close to my ideal,” and “so far I have gotten the important things I want in life.” Items are rated on a seven-point scale

ranging from “strongly disagree” to “strongly agree.” Alpha reliabilities for the SWLS ranged from .83 to .89 across the four sub-samples (i.e., two cohorts at each of two campuses) and four waves included in this study. Items were averaged together to create a life satisfaction score for each individual. The DASS is a 19-item that asks participants to indicate symptoms of depression and anxiety experienced in the past week with items such as “I felt I was using a lot of nervous energy” and “I felt down-hearted and blue.” Items are rated on a four-point scale ranging from “did not apply to me at all” to “applied to me very much, or most of the time.” Alpha reliabilities for the DASS ranged from .91 to .95. Items were averaged to create a DASS score for each individual.

Neuroticism. Neuroticism was measured at Wave 1 with the Big Five Inventory (BFI; John & Srivastava, 1999). The BFI is a commonly used self-report measure of the Big Five Traits in which participants rate, on a 5-point scale (1 = Disagree Strongly, 5 = Agree Strongly), the extent to which 44 statements reflect their traits. The Neuroticism scale of the BFI contains eight items (e.g., “Worries a lot,” “Is depressed, blue,” and “Is relaxed, handles stress well”-reversed). The alpha reliability for the scale at Wave 1 ranged from .78 to .84. After reverse-scoring necessary items, items were averaged together to create a neuroticism score for each participant.

Narrative Coding

Narrative prompts. Self-event connections were coded from four narratives collected at Wave 3 (end of freshman year) – an academic high point and low point and a romantic high point and low point (all narrative prompts can be found at <https://osf.io/e5u8h/>). Note that for the academic prompts there was a follow-up question regarding the impact of the high point/low point on major choice and career plans. The

response to this follow-up prompt was included in the self-event connection coding of the academic narratives, as it was expected that this further elaboration would potentially reveal more autobiographical reasoning in relation to the academic memories.

Narrative response frequencies. The majority of participants ($n = 307$; 70.3%) provided four narratives, with 69 (15.8%) providing three, 52 (11.9%) providing two, and only 9 (2.1%) providing 1 narrative. In terms of each type of narrative, 430 (98.4%) of participants provided an academic high point, 428 (97.9%) provided an academic low point, 333 (76.2%) provided a romantic high point, and 357 (81.7%) provided a romantic low point.

Coding of self-event connections. Self-event connections capture specific and explicit connections between the event described and the narrator's self (Pasupathi et al., 2007). These self-event connections can include a range of specific and broad aspects of the self, including personality traits, interests, hobbies, and the society in which the individual lives. They can be about aspects of self that are positive (e.g., I have always been a kind person – stable positive), or negative (e.g., I became much more jealous in relationships after that experience – change negative), or about aspects of self that have changed, or have remained stable, though we do not include that kind of analysis here. Thus, self-event connections were identified in each narrative, and coded as stable or change, and positive or negative, resulting in frequencies for each of the following types of connections for each narrative: positive stable, negative stable, positive change, negative change. Note that the coding was not mutually exclusive; a single narrative could have any combination of these different types of connections, including a mix of positive and negative connections. Using the self-event coding system

(<https://osf.io/c5p46/>), two undergraduate or graduate research assistants were trained to reliability with each other, supervised by one of the PIs. Once reliability was reached, both coders continued to code all narratives, checking each narrative with each other to prevent coder drift. Disagreements were settled by consensus between the two coders, or the PI if necessary (though this was quite rare) (see Syed & Nelson, 2015 for a discussion of best practices in reliability coding). Reliabilities were acceptable for each type of connection (range = .73 – 1.00 across the four waves of data and across the four narrative prompts). Note that we were unable to compute kappas on those codes with very low base rates, which were not included in analyses (e.g., negative connections in high points; see Table 1).

Composite narrative variables. We created several different composite variables from the self-event connection codes in order to examine separately the roles of positive and negative self-event connections as defined at different levels of narrative contextualization. These composites, created by summing positive and negative connections across four different levels of narrative contextualization, are listed in Table 1 and are organized by the four different models we tested in the current analyses. The first two composite variables were created for the “Fully Aggregated” model and operationalized narrative identity at the most de-contextualized level of analysis. These variables were created by summing the total number of positive connections (change and stable) across all of the narratives per person, and likewise for negative connections. The next set of composite variables were created for our second model, labeled “Event Valence”, in which we summed positive and negative connections separately for high points (academic and romantic) and low points (academic and romantic), thus creating

four composite variables: Positive Connections – HPs, Negative Connections-HPs, Positive Connections-LPs, and Negative Connections, LPs. The next set of composite variables was created for our third model, labeled “Life Domains”, in which we contextualized narration by academic vs. romantic. These composites were created by summing positive and negative connections separately for academic narratives (high point and low point) and romantic narratives (high point and low point), thus creating four composite variables: Positive Connections-Acad, Negative Connections-Acad, Positive Connections-Rom, Negative Connections-Rom. Finally, our fourth model, labeled “Fully Differentiated”, was the most contextualized in that we did not sum across narratives but rather used the sums for positive and negative connections for each individual narrative – academic high and low point and romantic high low point. This resulted in eight separate variables: Positive Connections-Acad HP, Negative Connections-Acad HP, Positive Connections-Acad LP, Negative Connections-Acad LP, Positive Connections-Rom HP, Negative Connections-Rom HP, Positive Connections-Rom LP, Negative Connections-Rom LP.

The raw sums for the narrative composite variables listed in Table 1 were used for our primary analyses. However, because participants provided varying numbers of narratives, we also created an average version of each of the variables in which we divided by the total number of narratives the person had that contributed to that composite. For example, if one person had four narratives with two positive connections in each, they would have an 8 for the summed version of the Positive Connections variable and a 2 for the averaged version of the same variable. If another person had 2 narratives with two positive connections in each, they would have a 4 for the summed

version and a 2 for the averaged version. As described below, the averaged version of the narrative variables were used for comparative, supplemental analyses.

Analysis Plan

We used linear growth-curve modeling (LGCM; Singer & Willett, 2003) to examine how narrative identity processes defined at varying levels of contextualization relate to changes in life satisfaction and DASS (symptoms of depression and anxiety) across four waves of data. We examined two sets of models using full information maximum likelihood with robust standard errors (MLR) using Mplus 7.4 (Muthén & Muthén, 1998-2015), one for life satisfaction (SWLS) and one for DASS. For all models, Time (for the repeated measurement of life satisfaction and DASS) was scaled as 0 at Wave 1, .5 at Wave 2, 1.0 at Wave 3, and 1.4 at Wave 4. The unit of 1.0 indicates roughly about a 10-month period from Wave 1 to Wave 3 (July/August to May/ June), with Wave 2 (middle of freshman year) coming about 5 months after Wave 1 (.5), Wave 3 (end of freshman year) coming about 5 months after that (1.0), and Wave 4 (beginning of sophomore year) coming about 4 months after that (1.4).

Our first model for each measure of college adjustment did not include any narrative predictors and simply modeled intra-individual linear and quadratic change. These models were intended to examine the general patterns (individual and mean-level) in changes in the measures of adjustment, and whether modeling linear change only or linear and quadratic change was a better fit to the data. These models were also intended to establish the level of individual differences in trajectories of change over time in the sample.

Next, for our main analyses, we proceeded to run four different models for each measure of adjustment that included Wave 3 narrative variables as person-level predictors of intra-individual change from Wave 1 to Wave 4. The composite narrative variables included in each of the models are listed in Table 1 and were described above. To assess model fit, we employed a standard series of fit indicators produced by Mplus: the chi-square test of goodness of fit, comparative fit index (CFI), root mean square error of approximation (RMSEA), Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC), and sample size adjusted BIC (ssBIC). In addition, we examined individual coefficients for each model to evaluate the relative value of specific narrative variables within and across the different levels of narrative contextualization represented by the four different models. The general goal was primarily conceptual and aimed at gaining a deeper understanding of the specific ways that contextualized narration may relate to changes in adjustment over time as well as illuminate the broader dynamics of narrative identity development.

Results

Descriptive Statistics and Bivariate Correlations for Main Study Variables

Descriptive information and correlations among the study variables are reported in Tables 1-3. The descriptive information reported in Table 1 for each narrative composite was instructive in two ways regarding how we proceeded with model testing. First, negative connections in high point narratives were especially rare, appearing in less than 2% of both academic and romantic high points. Therefore, we chose to eliminate negative connections in high point narratives in the two models in which these composites were relevant, Model 2: Event Valence and Model 4: Fully Contextualized. These variables are

also not included in our correlation tables. Second, the variables showed a varying but generally substantial amount of skew. For example, although positive connections ranged from 0-12, the mean number of connections per person was 2. Additional descriptive analyses showed that across all of the narrative composites reported in Table 1, skewness ranged from .72 (Pos Cons-Acad HPs) to 4.11 (Pos Cons-Rom LPs) with 13 of the 15 variables showing a skewness statistic over 1. Likewise, kurtosis for these variables ranged from .37 to 19.85, with 9 of the 15 variables showing a kurtosis statistic over 3. Thus, all of the results reported below and in Tables 3-6 use log transformed versions of the summed narrative variables.

Table 4 reports the correlations between the narrative measures at Wave 3 and the well-being measures at Waves 1- 4 as well as the correlations of these variables with two variables we included as controls in our models – campus and neuroticism (BFI-N). Campus is a dichotomous variable (Campus 1 = 0, Campus 2 = 1). Campus 1 scored higher on life satisfaction at Waves 1, 2, and 3 and lower on DASS at Wave 2. Campus 1 and Campus 2 did not differ on the narrative variables. Neuroticism, assessed at Wave 1, was significantly associated with all assessments of adjustment, correlating more strongly with DASS than with life satisfaction, and also correlating with several narrative variables, specifically, Negative Connections-Total, Negative Connections-LPs, Negative Connections-Academic, and Negative Connections-Acad LP. Because of these associations, we included Campus and Neuroticism as controls in a comparative set of models provided in the Supplementary Materials available online. These results are summarized below.

Preliminary Model Testing: Linear vs. Quadratic Models

As a preliminary first step, we compared linear and quadratic models to see which type of model provided the best general fit to the data for both life satisfaction and mental health (DASS). For life satisfaction, the quadratic model had estimation problems, so we defaulted to the linear model, which showed acceptable fit across several indices (Chi-square = 16.368, $df = 5$, $p = .006$; RMSEA = .072, CI: .035-.112; CFI = .980, TLI = .976). We also examined variances for the intercept and means and variances for the slope in the linear model for life satisfaction. For the intercept, the variance was 1.242, $p = .000$, indicating that life satisfaction showed a significant amount of variability at Time 1. For the slope, the mean was .012, $p = .782$ and the variance was .222, $p = .01$, indicating that while there was no overall, mean-level change in life satisfaction over time, there was a significant amount of variability in that change. This provided empirical justification for our study aim of examining whether individual differences in narrative identity processes during freshman year could help to explain individual differences in patterns of change in life satisfaction over time.

We also compared quadratic and linear models for the DASS. Although the fit was overall stronger for the quadratic model than the linear model, the fit was still quite good for the linear model (Chi-square = 8.783, $df = 5$, $p = .118$; RMSEA = .042, CI: .00-.086; CFI = .989, TLI = .987). Additionally, indices that correct for complexity favored the linear model (BIC for linear = 1746.901 and BIC for quadratic = 1759.545) and an examination of the means of the DASS across the four waves (see Table 2) showed little mean-level change that could best be described as a linear increase. Thus, the simpler, linear model was preferred over the quadratic model for modeling change in DASS. For the intercept, the variance was .148, $p = .000$, indicating a significant amount of

variability at Time 1. For the slope, the mean was .081, $p = .000$ and the variance was .038, $p = .007$, indicating both a significant mean-level increase in symptoms of depression and anxiety over time as well as significant variability in those trajectories. Thus, we aimed to determine whether narrative identity processes investigated in the current study might help to differentiate between those students who did and did not show this general trend of increasing DASS (i.e., deteriorating mental health) over the first year of college.

Main Model Testing

Our main analyses involved testing four different growth curve models each for life satisfaction and DASS respectively, with the models designed to assess the extent to which between-person differences in narrative identity processes at varying levels of contextualization relate to individual differences in patterns of adjustment, both pre-college adjustment (intercept) and change over time (slope). Table 5 reports the fit indices for each of the four models for life satisfaction and DASS.³ Overall, the fit indices for both sets of models were good and not substantially different from one another. Given a lack of substantial differences determined for model fit, we took the approach of keeping all four models in order to do a conceptual comparison across the different levels of narrative contextualization represented by the models for the prediction of life satisfaction and DASS respectively.

Growth Curve Models for Life Satisfaction

Table 6 reports the model coefficients (standardized and unstandardized) for the four different models for life satisfaction, separately for both the intercept at Wave 1 and the slope of change, Waves 1-4. Significant narrative predictors are noted in bold. First,

for the Model 1: Fully Aggregated ($n = 437$), Negative Connections-Total was significantly associated with the intercept for life satisfaction ($-.26, p = .000$) and Positive Connections-Total was positively associated with the slope ($.19, p = .029$). In other words, lower life satisfaction at Wave 1 was associated with forming more negative self-event connections at Wave 3, and more positive self-event connections at Wave 3 was associated with an increase in life satisfaction from Wave 1-4.

Turning to the next three models, for Model 2: Event Valence ($n = 425$), Negative Connections-LPs was negatively associated with the intercept ($-.25, p = .000$), showing that those who started out lower on life satisfaction formed more negative self-connections in the context of their low points. However, distinguishing between high points and low points in Model 2 did not explain variation in the slope of life satisfaction, with no narrative variables showing significant coefficients. For Model 3: Life Domains ($n = 380$), Negative Connections-Academic ($-.19, p = .001$) and Negative Connections-Romantic ($-.19, p = .007$) both were negatively associated with the intercept for life satisfaction, showing that the negative connections formed by those who entered college with lower life satisfaction were in the context of both academic and romantic events. Additionally, in this case, differentiation by life domain did help to explain variations in slope, with Positive Connections-Romantic associating positively with slope ($.19, p = .028$). In other words, those who formed more positive self-event connections in the context of romantic high points and low points increased more substantially on life satisfaction than those who did not.

Finally, turning to Model 4: Fully Contextualized ($n = 307$), this model included only those with all four narratives, as our score for positive and negative connections in

this model was calculated from each separate narrative (Acad HP and LP, Rom HP and LP). As shown in Table 6, two narrative variables were significantly associated with life satisfaction. Negative Connections-Rom LPs was negatively associated with the intercept for life satisfaction ($-.19, p = .025$) and Positive Connections-Rom HPs was positively associated with the slope ($.28, p = .031$). In other words, those who formed more negative views of self in the context of romantic low points started out lower in life satisfaction before college started, and those who formed more positive views of self in the context of romantic high points during freshman year showed the greatest increase in life satisfaction over the transition to college.

Growth Curve Models for DASS

Table 7 reports the model coefficients (standardized and unstandardized) for the four different models for DASS, separately for both the intercept at Wave 1 and the slope of change, Waves 1-4. Significant narrative predictors are again noted in bold. The first main finding to note from Table 7 is that none of the narrative predictors included in our models were significantly associated with individual trajectories of change over time on DASS, as indicated by no significant associations with the slopes across all four models. Thus, to the extent that students showed variation in their individual trajectories of change over time on DASS over the first year of college, it was not associated with differences in autobiographical reasoning in academic and romantic high points and low points. Instead, Table 7 shows that the intercept for DASS was associated with Negative Connections-Total ($.20, p = .001$) in Model 1: Fully Aggregated, but this aggregated effect was specifically driven by negative connections formed in low points, as shown in Model 2: Event Valence ($.20, p = .001$), negative connections in academic events, as

shown in Model 3: Life Domains (.16, $p = .007$), and, at the most contextualized level of analysis, academic low points, specifically, as shown in Model 4 (.19, $p = .006$).

Additionally, in Model 4, the intercept for DASS was negatively associated with positive connections in romantic LPs (-.12, $p = .016$).

Summary of Findings from Comparison Models

As noted above, we ran two additional sets of analyses for comparison purposes, and all of these results may be found in the Supplemental Materials (Tables 8-15). First, we ran all of the correlations and growth curve models reported in Tables 3-7 with the averaged (log transformed) version of the narrative variables, which were described above in the Method (Tables 8-12). The averaged version of the narrative variables allowed us to account for the varying numbers of narratives provided by each participant.² As shown in Tables 11 and 12, all of the associations that were significant in Tables 6 and 7 across all of the models remained significant with the averaged version of the narrative variables, showing that the number of narratives provided by each participant was not a driving factor in the results.

Second, we ran a version of our models (using the summed and log transformed narrative variables) that included campus and neuroticism as controls (Tables 13-15). Campus was associated with the Wave 1 intercept for life satisfaction (Campus 1 higher than Campus 2) with a similar pattern for DASS that was more unstable and marginally significant. Campus was not associated with slopes in any of the models. Not surprisingly, neuroticism (measured at Wave 1), was strongly associated with the intercepts for life satisfaction and DASS across all of the models, showing the substantial baseline overlap between neuroticism and adjustment (consistent with correlations

reported in Table 4). More surprisingly, neuroticism was also positively associated with the slope for life satisfaction (across the models), showing that those higher in neuroticism prior to college actually increased in life satisfaction over the first year. This may be because they started out very low at Wave 1 and had substantial room to improve. Neuroticism was not associated with the slope for DASS in any of the models. Most importantly, all of the associations for the narrative variables reported in Tables 6 and 7 remained significant with the inclusion of the control variables. Importantly, the associations between the intercepts at Wave 1 for life satisfaction and DASS and negative self-event connections formed at Wave 3 were not accounted for by their relations with neuroticism (see Table 4). In other words, poor adjustment prior to college predicted maladaptive narrative identity processes independent of the trait of neuroticism. It was also the case that the association between positive self-event connections (especially in romantic high points) and increasing life satisfaction remained significant when campus and neuroticism were controlled.

In sum, our supplemental analyses showed that the pattern of findings demonstrated in our main models held across different ways of calculating the narrative variables (sums and averages) and with and without control variables.

Discussion

The present study was undertaken with several noteworthy innovations regarding the empirical examination of narrative identity development. Specifically, we operationalized narrative identity development in terms of the formation of positive and negative self-event connections, but we also contextualized these processes in life domains (romance and academics), in emotional valence (high and low points), and in

developmental time (the transition of the first year of college). These methodological advances produced results that both reinforced well-established patterns in the literature and offered novel findings that have the potential to advance theory on narrative identity and personality processes more broadly.

Consistent with existing theory and research (Adler et al., 2016), we found that narrative identity processes were related to changes in adjustment even after controlling for neuroticism and were also associated with levels of adjustment assessed prior to the events being narrated. More importantly, however, we found that differentiating by domain and valence provided important nuance to our understanding of just how autobiographical reasoning matters for adjustment, particularly among emerging adults navigating the college transition. We detail these contributions below.

Contextualizing Narrative Identity: The Roles of Life Domain and Event Valence in Relation to Life Satisfaction and Mental Health

Prior research on identity development that uses non-narrative, quantitative measures of identity has long established a longitudinal connection between general increases in identity achievement and adjustment during emerging adulthood (e.g., Azmitia, Syed, & Radmacher, 2013; Luyckx, Schwartz, Goossens, Soenens, & Beyers, 2008). In other words, forming a positive identity appears to promote improved adjustment. However, this work has typically operationalized identity at a broad level, providing little in-depth understanding of how specific types of contexts and experiences are involved in this process. In contrast, narrative identity is, in a sense, always highly contextualized in that identity emerges from how one makes sense of specific life experiences; however, it is only quite recently that research in narrative identity has taken

up the issue of contextualizing by life domain more explicitly (Dunlop, 2015; Galliher et al., 2017). From this work, it is becoming clear that individuals do not reason about all life experiences in the same way – the identity domain involved matters (McLean et al., 2016). However, the current results offer an interesting twist on these newer insights because in this study, we were not simply comparing different levels of types of processing in different types of narratives, we compared how the same forms of processing matter for adjustment depending on the type of event being narrated. To our knowledge, this is the first time a direct comparison of this kind has been conducted in the study of narrative identity and adjustment. It is noteworthy that the pattern of findings was quite different for two indicators of adjustment. Below we take a closer look at the pattern of results found, first for life satisfaction and then for symptoms of depression and anxiety, focusing on how a comparative perspective across the increasingly contextualized models enriches our understanding of the relationship between narrative identity and adjustment during the transition to college. We then identify a few broader themes and possible conclusions from this exploratory work that generate important avenues for future research.

Life satisfaction. At the fully aggregated level of analysis, positive self-event connections were associated with increasing life satisfaction, and negative self-event connections were predicted by lower levels of life satisfaction prior to college starting. However, these patterns were given more nuance and texture by the more contextualized models. First, the association between lower life satisfaction at Wave 1 and negative self-event connections was found for both academic and romantic domains. In contrast, the association of positive self-event connections with increasing life satisfaction was

domain-specific. Specifically, this association was primarily driven by autobiographical reasoning in romantic high points, as shown by the results for the domain and fully contextualized models. This is an interesting finding in that for first-year college students, the newfound freedom and independence of social life may make the romantic domain an especially exciting context for healthy forms of self-exploration about how relationships work, what one is like in a relationship, or what one wants out of a relationship – as seen in the narrative that opens this paper. At a time in which one is first developing an identity as a possible romantic partner, these positive and growth-oriented self-event connections may be especially important and lead to enhanced life satisfaction over time.

It is important to note that because self-event connections were assessed at Wave 3, it is also possible that students who increased in life satisfaction over the first year were more likely to look back on a romantic high point in a positive way. However, if this were the case, we expect that the association between increase in life satisfaction and positive connections would not be domain-specific; life satisfaction would result in a positive outlook on self across domains. Indeed, this more global effect was the case with lower life satisfaction at Wave 1 predicting negative self-event connections across both domains at Wave 3. Thus, although further research is necessary, our findings for life satisfaction are generally consistent with the ideas that a) stable patterns of low life satisfaction may be associated with globally negative autobiographical reasoning, and b) positive autobiographical reasoning in response to romantic high points during college may contribute to increasing life satisfaction over time.

Depression and anxiety symptoms. Contrary to our general expectations, none of our indicators of narrative identity processing were associated with changes in levels of

depression and anxiety across the first year of college. Because this study and past studies have shown a normative increase in these feelings during the college transition, it is important for future research to identify what factors contribute to the increase, and to individual differences in the increase, specifically. Perhaps narrative identity processes are not involved, or it may be that other narrative factors, or *changes in narrative factors* (which we did not assess), predict changes in symptoms of depression and anxiety. For example, Adler (2012) found that changes in narrative agency was related to improvements in mental health. Alternatively, it could be the case positive narrative identity processes are more relative to positive changes in adjustment (increases in life satisfaction) than negative changes (increases in depression and anxiety), a topic we return to below.

The main findings for symptoms of depression and anxiety emphasized stability rather than change. Specifically, higher levels of depression and anxiety prior to college starting were associated with negative self-event connections at the end of the first year, and the more contextualized models suggested that this was especially driven by academic low points. This finding suggests that academic difficulties may act as a threat to the existing self-concept during the first year of college, a self-concept that has existed for many years. Indeed, research shows that academic self-concept develops as soon as children begin school and continues to develop across childhood and adolescence (Harter, 2012). However, college-level academics are often more challenging than in high school, creating the possibility of threat to one's academic identity. Navigating this more challenging terrain requires effective coping among first-year college students, and the current findings suggest those who are already struggling with their psychological health

when they arrive at college are most vulnerable to having academic low points consolidate feelings of inadequacy and failure. Indeed, cognitive approaches to depression have shown how the depressive explanatory style can magnify internal, global, and stable negative interpretations of events (e.g., Sweeney, Anderson, & Bailey, 1986), which could certainly manifest as negative self-event connections formed in academic low point narratives. This pattern is evident in the second example provided at the opening of this paper, in which the student initially emphasizes a lack of confidence that becomes reinforced and strengthened by the end of the narrative. In contrast, one could imagine a student who arrived at college with better affective mental health (i.e., less depression and / or anxiety) being able to process this experience and ultimately narrate it in a way that is less damaging to the self-concept.

In sum, it was unexpected and is interesting to note that narrative identity processes were associated with changes in life satisfaction but not changes in levels of depression and anxiety. This finding is consistent with research on life events and changes in well-being over time has shown that lasting changes tend to be found more for life satisfaction, which is considered to be a more cognitive form of well-being and not for more affective forms of well-being such as symptoms of depression and anxiety (Luhmann et al., 2012). Thus, it could be that lasting effects of both the occurrence of the events themselves and the interpretive narrative identity processes they engender take hold more readily in the realm of the cognitive assessment of one's life than in one's basic affective well-being and mental health.

Emotional Valence: Events and Self-Event Connections

Any interesting feature of our approach was that emotional valence was doubly featured in our analyses in that we assessed positive and negative self-event connections in both high point and low point narratives. In principle, these aspects of emotional valence are separate; the valence of past events is distinguishable from the valence of their subjective interpretations in narrative coding, and it has typically been the interpretations that have been found to matter more for adjustment (Lilgendahl & McAdams, 2011). However, in the current study we found that not all combinations were equally common, and that, not surprisingly, positive connections in high points and negative connections in low points were not only the most common combinations but also the most clearly related to patterns of adjustment. Interestingly, however, although positive connections from low points were relatively prevalent, they did not relate to adjustment in the same way that positive connections from high points did. This is an important finding, because it does again suggest that it is not only the interpretations that matter for adjustment and well-being, but also the types of events. And following Lilgendahl (2015), forming positive self-event connections from *positive events*, specifically, may be especially important during emerging adulthood when identity is first developing, because they act as building blocks and lay a solid foundation for the newly developing self. In sum, the current findings show that positive self-event connections formed in high points and low points may not have equivalent significance for adjustment during emerging adulthood, which enriches our understanding of the developmentally varying roles of positive and negative events in narrative identity development over adulthood.

Dynamic Relations Between Narrative Identity and Adjustment Over Time: Theoretical Implications and Questions for Future Research

An important finding of our study was that narrative identity processes during the first year of college were found to be associated both with stable aspects of adjustment measured prior to the college transition as well as changing aspects of adjustment over this transitional period. These findings are entirely correlational, and, although our design is longitudinal, it necessarily lacks a fully cross-lagged design that would allow for stronger claims of causality (i.e., one cannot assess narratives about college before college starts). Nevertheless, the pattern we found – of narrative identity indicators being associated with both stable and changing aspects of adjustment – is consistent with our own broader theorizing (McLean, Pasupathi, & Pals, 2007) that narrative identity may have dynamic and reciprocal relations with adjustment over time. In this model, we argued for a dynamic and situated perspective in which aspects of the person (e.g., traits, adjustment, etc.) predict how someone narrates a story, and that narrating a story in context can serve to maintain or change those same qualities of the person over time. However, the current findings add something new to that original theoretical contribution, which is that the type of reasoning (positive vs. negative self-event connections), the type of event (academic or romantic, high point or low point), and the aspect of the person (form of adjustment) may matter for understanding whether narrative is a mechanism or an outcome. Although totally speculative at this point, our findings offer some interesting new hypotheses to test regarding possible dynamic relations between narrative identity and adjustment.

Focusing on narrative as a possible mechanism of change in adjustment, our finding that positive self-event connections (particularly in romantic high points) related to increased life satisfaction contributes to the growing and diverse set of findings which support a link between *positive* forms of autobiographical reasoning and *positive* changes in adjustment and developmental outcomes. For example, in a short-term longitudinal study, Adler (2012) found that positive changes in narrative patterns (themes of agency) about the experience of therapy *preceded* positive changes in mental health; that is, the activity of storytelling shifted, which was followed by shifts in how one feels. In another longer-term example, accommodative processing in narratives of difficult events (i.e., a healthy narrative coping process) was associated with increases in ego development over periods of two to eighteen years (King et al, 2000; Lilgendahl et al, 2013). The similarities across these otherwise very different studies is that there is something going on in the person's life that may be a catalyst for change, and that positive narrative processes played a critical role in how sustained positive changes comes about. Together, such findings are suggesting that positive and healthy forms of narrative identity processing, perhaps especially taking place in the context of challenges or life transitions, could be a mechanism of positive change.

In contrast, negative self-event connections did not relate to declining adjustment in the form of increases in depression or anxiety or decreases in life satisfaction. Rather, negative self-event connections were associated with stable, low levels of adjustment that already existed prior to college starting. In other words, those who started out college more poorly adjusted (lower life satisfaction and higher depression and anxiety levels) also showed the pattern of coming to more negative conclusions about the self, and this

was found even after controlling for neuroticism. Thus, one speculative conclusion of our research worthy of further investigation is that globally negative reasoning about the self may be a manifestation of poor adjustment and mental health struggles that were already present. In sum, the current findings contribute to a handful of studies that have linked a range of narrative identity processes to longitudinal and bi-directional patterns of both stability and change in various qualities of adjustment and development over time, and identify several nuances in these patterns that warrant further investigation. Going forward, fully cross-lagged longitudinal designs or narrative identity intervention studies are what would be needed to test these currently speculative ideas about how adjustment affects narrative identity and narrative identity, in turn, affects adjustment.

Narrative Identity and Retrospective Timeframe

One of the methodological contributions that we hope invigorates new lines of thinking about the dynamics of narrative identity development, is the timeframe we chose for event selection, which is distinct from traditional research that either require no timeframe, or requests events that are at least one year old to ensure relevance to the life story. In contrast, we do not necessarily expect that events narrated in this study will become an enduring part of our participants' long-term narrative identity. Indeed, we forget the great majority of events that we experience over the course of a year (Thompson, Skowronski, Larsen, & Betz, 1996). Our intention was to capture a dynamic, developmental process – the activity of narrating what is happening in the relative present. Such an approach is consistent with ideas that ongoing narrative activity may serve to build and sustain narrative identity in broad strokes, rather than instantiate particular events in one's identity (see McLean & Pasupathi, 2012). This approach was

also useful for understanding a time of rapid development and change, and could be useful to other researchers interested in capturing the dynamic interplay over time between shorter and longer-term processes of identity development (Lichtwarck-Aschoff et al., 2008).

Although the retrospective timeframe was highly controlled in comparison to typical narrative identity research, it could also be considered a limitation that we were not able to account for the exact timing of the academic and romantic high points and low points during the first year of college. This information was not reliably reported in the narratives, so we were not able to assess whether it correlated with adjustment or accounted for its relationship with narrative identity processes. Although the time that has elapsed since an event has occurred has been shown to be an important factor in the literature on major life events (e.g., marriage) and well-being (Luhmann et al., 2012), we do not expect this factor to play a significant role in the current findings given that our focus was on individual differences in the narrative interpretation of events rather than on the objective occurrence of the events themselves. In the few instances where event timing has been taken into account in the narrative identity literature, it has been shown to be minimally correlated with subjective qualities coded from narratives and to not account for their relations with well-being (e.g., Pals, 2006). Similarly, in the current study, the key issue is not whether a typical college event such as getting a bad grade on an exam (common academic low point) happened six months ago or last week but rather a) that it was selected as one's academic low point, which is an inherently retrospective and interpretive process, and b) whether the autobiographical reasoning that is present (if any) is positive for the self (e.g., I learned from this experience and became a better

student) or negative (e.g., It made me feel inadequate in college and I continue to struggle with these feelings). In sum, positive and negative self-event connections are interpretations that magnify the positivity or negativity of an event in the present by making it relevant to identity development, goal attainment, and self-worth, and these psychological processes are likely to relate to patterns of adjustment independently of any separate main effects that may also exist for objective event timing.

Strengths, Limitations, and Conclusions

In conclusion, we note the strengths of the present study, which include the sample size, which is large for such intensive, narrative research, the representation of emerging adults from two quite distinct campuses, the longitudinal design, the sophisticated modeling approach, and our methodological and theoretical contributions.

In terms of limitations, we first note that we ran a relatively large number of tests across the four different models that included several different narrative indicators each. Effect sizes were relatively small overall, and should be interpreted with caution, especially those pertaining to change in adjustment and the most contextualized models, where effect sizes were the smallest and least reliable, with p values around .05. However, we want to emphasize that our analyses were largely exploratory and conducted with the broader goal of introducing a new way of examining narrative data that considers the content of the events being narrated in addition to the narrative qualities coded. To be too restrictive would limit our ability to engage in theory-building from these data. In sum our findings are meant to be suggestive and will hopefully inspire new research that replicates these findings and extends our contextualized approach to narrative identity.

Second, although our focus on academics and romance is theoretically well grounded as central to development in emerging adulthood, it should be noted that we could have missed other domains that are important contexts of narrative identity development during the transition to college, such as family, ethnicity, or friendship. However, gathering high points and low points from many domains would have been logistically impossible in terms of resources and sample sizes. Further, had we allowed students to select their own most significant events from the first year, we would have missed the opportunity to do a more systematic comparison of the role of event type qualities, which was a central goal of this investigation. Still it should be noted that it is a departure from traditional narrative identity research (with both strengths and weaknesses) to constrain the domain of event selected for narration.

Third, it was the case that although our sample size was relatively large, it decreased as our models got increasingly specific because some participants did not have romantic experiences to report (despite our attempt to define this domain as broadly as possible). Thus, the findings for the fully aggregated models are the most robust and reliable and findings, and the most contextualized models require the most cautious interpretation.

Finally, it will be important in future studies to examine how relations between narrative identity processes and adjustment may vary across different sub-groups of college students in the U.S., particularly as they vary by ethnicity, cultural background, and socioeconomic and first-generational status, as these are factors that have been shown to matter for adjustment during the college transition (e.g., Liu et al., 2018), and also to relate to students' identities in important ways during the college years (e.g., Aries

& Seider, 2005). Indeed, the intersection between identity-relevant demographic factors and type of institution (e.g., first-generation college student at an elite private institution vs. a community college) may also shape what types of events are most relevant for identity during the college transition and how those events are interpreted in relation to the self (see Aries & Seider, 2005).

Overall, this study contributes to the increasingly robust understanding of the role that narrative identity plays in psychological adjustment broadly, and in the developmentally important transition to college more specifically. While we have known that healthy identity development generally relates to adjustment in emerging adulthood, our findings importantly show that this process is rooted in context and that the same narrative processes may have different implications for identity and adjustment depending on event type, as defined by domain and valence. More broadly, our contextualized approach represents a novel departure from prior research on narrative identity in several noteworthy ways, and as a result, our findings represent a springboard for a new stage of theorizing about the complex and dynamic role of context in narrative identity processes, adjustment, and personality development. We encourage others to approach critical developmental transitions, stages, and life circumstances with a similar approach -- that is, gathering sets of different types of narratives that are intentionally selected to understand the nuances of contextualized meaning-making as individuals navigate these broader life changes and challenges and integrate these experiences into their ever-evolving identities.

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Footnotes

1. Although we did not pre-register these hypotheses via OSF, we have created an OSF page for the Identity Pathways Project (<https://osf.io/57ax3/>) where we have posted our NSF grant application, which includes our hypotheses, and which was submitted before data collection was complete and before any analyses were conducted.
2. It should be noted that the averaged versions of the narrative variables do not differ from the summed versions at the level of Model 4: Fully Contextualized. This is because at that level of analysis, the connection totals are drawn from a single narrative (Acad HP, Acad LP, etc.), and dividing by the number of narratives (one) therefore produces the same value as the sum. Thus, the analyses provided in the Supplemental Materials for the averaged version of the variables are only Models 1-3 and the bivariate correlations pertaining to those models.
3. The sample sizes for the models reported in Table 5 vary and were determined by the total number of people that provided at least one narrative to contribute to each of the narrative variables included in each model. For example, if a person provided two academic narratives and zero romantic narratives, then that person would be excluded from Model 3: Life Domains, because there were no narratives from which to calculate the connection variables for the romantic life domain. Likewise, for Model 2: Event Valence, the requirement for inclusion was having at least one HP and at least one LP from which to calculate connection totals for those two types of narratives. For Model 4, the sample size is the number of people who provided all four narratives.

Table 1

Descriptive Statistics for Variables Created from Self-Event Connection Coding of Academic and Romantic High Point and Low Point Narratives

Narrative Variables (by Model)	Min-Max	Mean (<i>SD</i>)	% with ≥ 1
<u>Model 1: Fully Aggregated</u>			
Positive Connections-Total ($n = 437$)	0-12	2.00 (1.73)	81.5%
Negative Connections-Total ($n = 437$)	0-4	.58 (.83)	41.2%
<u>Model 2: Event Valence</u>			
Positive Connections-HP ($n = 433$)	0-10	1.51 (1.31)	77.1%
Negative Connections-HP ($n = 433$)	0-1	.03 (.16)	2.8%
Positive Connections-LP ($n = 429$)	0-6	.51 (.876)	33.8%
Negative Connections-LP ($n = 429$)	0-4	.56 (.80)	40.8%
<u>Model 3: Life Domain</u>			
Positive Connections-Acad ($n = 437$)	0-7	1.66 (1.37)	78.0%
Negative Connections-Acad ($n = 437$)	0-3	.40 (.65)	31.6%
Positive Connections-Rom ($n = 380$)	0-5	.39 (.78)	27.1%
Negative Connections-Rom ($n = 380$)	0-4	.21 (.51)	17.6%
<u>Model 4: Fully Contextualized</u>			
Positive Connections-Acad HP ($n = 430$)	0-5	1.28 (1.06)	74.4%
Negative Connections-Acad HP ($n = 430$)	0-1	.01 (.12)	1.4%
Positive Connections-Acad LP ($n = 428$)	0-4	.40 (.71)	30.1%
Negative Connections-Acad LP ($n = 428$)	0-3	.39 (.64)	31.5%
Positive Connections-Rom HP ($n = 333$)	0-5	.31 (.62)	24.9%
Negative Connections-Rom HP ($n = 333$)	0-1	.02 (.13)	1.8%
Positive Connections-Rom LP ($n = 357$)	0-4	.13 (.47)	9.2%
Negative Connections-Rom LP ($n = 357$)	0-3	.21 (.49)	17.6%

Note: The third column is the percent of the total sample ($N = 437$) that has at least one of each type of self-event connection.

Table 2

Descriptives and Intercorrelations for Repeated Measures of Adjustment Across the First Year of College

	Life Satisfaction				DASS			
	Wave 1 (n = 437)	Wave 2 (n = 409)	Wave 3 (n = 432)	Wave 4 (n = 355)	Wave 1 (n = 437)	Wave 2 (n = 409)	Wave 3 (n = 432)	Wave 4 (n = 355)
Mean (SD)	4.92 (1.34)	4.90 (1.37)	4.85 (1.39)	5.02 (1.27)	1.52 (.45)	1.57 (.52)	1.62 (.54)	1.62 (.49)
Life Satisfaction								
Wave 1		.64	.63	.57	-.45	-.31	-.31	-.34
Wave 2			.72	.70	-.40	-.50	-.39	-.45
Wave 3				.73	-.36	-.36	-.50	-.38
Wave 4					-.24	-.32	-.35	-.49
DASS								
Wave 1						.62	.55	.54
Wave 2							.63	.61
Wave 3								.62
Wave 4								

Note. All correlations are significant at the level of $p < .01$.

Table 3

Intercorrelations among Positive and Negative Self-Event Connection Variables Calculated at Different Levels of Contextualization in Academic and Romantic High Point and Low Point Narratives

	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Fully Aggregated:														
1. Pos Cons-Total	.09	.89	.61	.07	.93	-.01	.54	.14	.84	.54	-.02	.47	.35	.13
2. Neg Cons-Total		.11	-.01	.98	.06	.83	.06	.60	.10	-.02	.83	.08	.01	.59
Event Valence:														
3. Pos Cons-HPs			.22	.10	.83	.03	.47	.13	.94	.18	.02	.53	.16	.13
4. Pos Cons-LPs				-.02	.56	-.08	.40	.08	.20	.90	-.09	.15	.53	.07
5. Neg Cons-LPs					.05	.82	.03	.58	.09	-.02	.84	.06	-.01	.60
Life Domain:														
6. Pos Cons-Acad						-.00	.20	.07	.89	.58	-.01	.17	.14	.08
7. Neg Cons-Acad							-.06	.05	.05	-.08	.99	-.06	-.02	.04
8. Pos Cons-Rom								.19	.20	.14	-.08	.87	.63	.18
9. Neg Cons-Rom									.07	.07	.06	.23	.03	.98
Fully Contextualized:														
10. Pos Cons-Acad HP										.18	.05	.19	.12	.05
11. Pos Cons-Acad LP											-.09	.11	.10	.08
12. Neg Cons-Acad LP												-.08	-.03	.05
13. Pos Cons-Rom HP													.15	.22
14. Pos Cons-Rom LP														.02
15. Neg Cons-Rom LP														

Note. All correlations in bold are significant at the level of $p < .01$.

Table 4

Bivariate Correlations Among Variables Included in Models: Controls, Narrative Variables, and Adjustment Measures

	Life Satisfaction				DASS				Control variables	
	Wave1	Wave2	Wave3	Wave4	Wave1	Wave2	Wave3	Wave4	Campus	Wave1BFI-N
Control variables										
Campus	-.12	-.12	-.12	-.09	.08	.12	.05	.02	--	.07
Wave 1 BFI-N	-.38	-.31	-.28	-.25	.56	.40	.37	.47	.07	--
Narrative variables (log tr)										
Pos Cons	.03	.07	.13	.15	-.00	.01	.01	.01	.01	.03
Neg Cons	-.21	-.18	-.16	-.15	.17	.13	.12	.09	-.06	.14
Pos Cons-HPs	.01	.04	.10	.14	.03	.06	.02	.05	-.05	.05
Pos Cons-LPs	.06	.11	.11	.07	-.07	-.06	-.02	-.07	.07	-.03
Neg Cons-LPs	-.21	-.18	-.15	-.17	.16	.13	.12	.09	-.07	.14
Pos Cons-Acad	.03	.06	.13	.10	-.00	.02	.02	.02	.02	.01
Neg Cons-Acad	-.16	-.17	-.16	-.16	.18	.13	.12	.08	-.06	.13
Pos Cons-Rom	-.01	.04	.05	.15	-.00	.01	-.05	-.03	-.03	.07
Neg Cons-Rom	-.18	-.09	-.08	-.07	.04	.04	.02	.06	-.02	.08
Pos Cons-Acad HP	.02	.04	.09	.12	.02	.05	.03	.06	-.04	.03
Pos Cons-Acad LP	.04	.07	.10	.03	-.06	-.04	-.02	-.07	.09	-.05
Neg Cons-Acad LP	-.16	-.17	-.15	-.17	.17	.12	.12	.08	-.07	.12
Pos Cons-Rom HP	-.03	-.01	.05	.12	.02	.05	-.08	-.03	-.03	.06
Pos Cons-Rom LP	.03	.09	.04	.12	-.05	-.06	-.00	-.04	-.04	.01
Neg Cons-Rom LP	-.20	-.09	-.06	-.08	.06	.05	.02	.08	-.02	.09

Note. All correlations in bold are significant at the level of $p < .05$.

Table 5

Model fit indices for GCM (Growth Curve Modeling) Analyses for LS and DASS

Models	AIC	BIC	ssBIC	Chi square	RMSEA(90% CIs)	CFI	n
<i>SWLS</i>							
1. Aggregated	4726	4779	4738	19.31, $df = 9, p = .02$	.051 (.018 - .083)	.986	437
2. Valence	4586	4647	4600	18.86, $df = 11, p = .06$	.041 (.000 - .072)	.989	425
3. Domain	4102	4169	4115	24.89, $df = 13, p = .02$	.049 (.017 - .078)	.982	380
4. Contextualized	3302	3380	3313	23.00, $df = 17, p = .15$	.034 (.000 - .066)	.988	307
Models	AIC	BIC	ssBIC	Chi square	RMSEA(90% CIs)	CFI	n
<i>DASS</i>							
1. Aggregated	1704	1758	1717	10.26, $df = 9, p = .33$	.018 (.000 - .058)	.997	437
2. Valence	1666	1727	1679	13.02, $df = 11, p = .29$	.021 (.000 - .057)	.996	425
3. Domains	1495	1562	1508	12.44, $df = 13, p = .49$	.000 (.000 - .049)	1.00	380
4. Contextualized	1165	1242	1176	27.52, $df = 17, p = .05$	.045 (.000 - .074)	.977	307

Table 6

Coefficients for GCM Analyses Predicting Life Satisfaction, Waves 1-4 – Four Models

Model 1: Fully Aggregated ($n = 437$)

	Unstandardized Estimate	S.E.	Standardized Estimate	P-value
<i>Intercept</i>				
Pos Connections-Total	.145	.107	.075	.176
Neg Connections-Total	-.664	.142	-.264	.000
<i>Slope</i>				
Pos Connections-Total	.152	.070	.188	.029
Neg Connections-Total	.160	.093	.152	.084

Model 2: Event Valence ($n = 425$)

<i>Intercept</i>				
Pos Connections – HP	.076	.124	.036	.541
Pos Connections – LP	.168	.145	.068	.244
Negative Connections – LP	-.644	.148	-.254	.000
<i>Slope</i>				
Pos Connections – HP	.130	.079	.151	.100
Pos Connections – LP	.038	.083.	.038	.646
Negative Connections – LP	.167	.096	.16	.082

Model 3: Life Domains ($n = 380$)

	Unstandardized Estimate	S.E.	Standardized Estimate	P-value
<i>Intercept</i>				
Pos Connections-Acad	.042	.124	.021	.733
Neg Connections-Acad	-.536	.167	-.191	.001
Pos Connections-Rom	.017	.180	.006	.923
Neg Connections-Rom	-.674	.250	-.185	.007
<i>Slope</i>				
Pos Connections-Acad	.093	.078	.109	.229
Neg Connections-Acad	.034	.115	.028	.769
Pos Connections-Rom	.222	.101	.194	.028
Neg Connections-Rom	.277	.154	.180	.072

Model 4: Fully Contextualized ($n = 307$)

<i>Intercept</i>				
Pos Connections-Acad HP	.071	.169	.033	.669
Pos Connections-Acad LP	.071	.167	.028	.673
Neg Connections-Acad LP	-.384	.199	-.136	.053
Pos Connections-Rom HP	-.140	.218	-.048	.520
Pos Connections-Rom LP	.557	.311	.139	.074
Neg Connections-Rom LP	-.653	.292	-.186	.025
<i>Slope</i>				
Pos Connections-Acad HP	.060	.100	.073	.551
Pos Connections-Acad LP	.010	.114	.011	.927
Neg Connections-Acad LP	-.035	.139	-.033	.802
Pos Connections-Rom HP	.307	.142	.280	.031
Pos Connections-Rom LP	-.020	.148	-.013	.895
Neg Connections-Rom LP	.297	.195	.224	.129

Table 7

Coefficients for GCM Analyses Predicting DASS, Waves 1-4 – Four Models

Model 1: Fully Aggregated ($n = 437$)

	Unstandardized Estimate	S.E.	Standardized Estimate	P-value
<i>Intercept</i>				
Pos Connections-Total	-.015	.035	-.023	.660
Neg Connections-Total	.172	.051	.199	.001
<i>Slope</i>				
Pos Connections-Total	.019	.028	.055	.500
Neg Connections-Total	-.042	.037	-.094	.257

Model 2: Event Valence ($n = 425$)

<i>Intercept</i>				
Pos Connections – HP	.020	.045	.027	.651
Pos Connections – LP	-.061	.050	-.071	.224
Negative Connections – LP	.166	.052	.189	.001
<i>Slope</i>				
Pos Connections – HP	.027	.034	.070	.426
Pos Connections – LP	-.005	.038	-.011	.901
Negative Connections – LP	-.043	.037	-.095	.231

Model 3: Life Domains ($n = 380$)

	Unstandardized Estimate	S.E.	Standardized Estimate	P-value
<i>Intercept</i>				
Pos Connections-Acad	-.001	.042	-.002	.974
Neg Connections-Acad	.165	.061	.162	.007
Pos Connections-Rom	.003	.054	.003	.956
Neg Connections-Rom	.048	.078	.037	.533
<i>Slope</i>				
Pos Connections-Acad	.019	.030	.048	.540
Neg Connections-Acad	-.042	.047	-.078	.379
Pos Connections-Rom	-.031	.040	-.060	.440
Neg Connections-Rom	.021	.051	.030	.684

Model 4: Fully Contextualized ($n = 307$)

<i>Intercept</i>				
Pos Connections-Acad HP	-.001	.055	-.001	.984
Pos Connections-Acad LP	-.019	.069	-.020	.787
Neg Connections-Acad LP	.196	.072	.186	.006
Pos Connections-Rom HP	.077	.074	.071	.296
Pos Connections-Rom LP	-.181	.075	-.121	.016
NegConnections-Rom LP	.023	.088	.018	.794
<i>Slope</i>				
Pos Connections-Acad HP	.043	.038	.100	.260
Pos Connections-Acad LP	-.040	.048	-.081	.400
Neg Connections-Acad LP	-.081	.056	-.146	.147
Pos Connections-Rom HP	-.111	.058	-.194	.054
Pos Connections-Rom LP	.038	.046	.049	.406
Neg Connections-Rom LP	.056	.061	.081	.355