

Predicting Generative Concern in Young Adulthood from Narrative Intimacy:

A 5-year follow-up

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## Abstract

According to Erikson's developmental model, achieving intimacy in young adulthood should predict higher levels of generativity later in life. This mixed quantitative and qualitative, longitudinal study examined the relationship between generative concern and intimacy in young adulthood (from ages 26-32). Participants ( $N = 147$ ; 69% female; 74.1% college educated) told a narrative about a "relationship defining moment" with a same-sex friend, and completed self-report questionnaires of optimism and generative concern at ages 26 and 32. Optimism and generative concern had strong stability over time, while friendship intimacy did not exhibit test-retest stability. Most participants (88.6%) disclosed a different story at each time point, which contributed to the lack of rank-order stability for friendship intimacy in the present study. Friendship intimacy was positively correlated with age 26 and age 32 generative concern. Both sex and optimism predicted longitudinal increases in generative concern over 5 years, with women and people higher in optimism seeing larger increases. Friendship intimacy coded from narratives at 26 predicted ( $p = .052$ ) increases in generative concern at 32. The present study extended prior research by examining the relationship between intimacy and generative concern as people develop from emerging to young adulthood. Following Erikson, developing close relationships with others, exhibiting an optimistic outlook on life, and being female appear to facilitate greater generative concern in young adults.

Keywords: generativity; intimacy; friendship; optimism; mixed methods

## Predicting Generative Concern in Young Adulthood from Narrative Intimacy:

### A 5-year follow-up

Erikson identified eight developmental stages, which begin in infancy and end in older adulthood (Erikson, 1963). In Erikson's model, the core psychosocial crisis of adolescence is identity versus identity confusion, and the primary focus of care is the self. The core psychosocial crisis of young adulthood is intimacy versus isolation, and the radius of care extends to a few close others. In middle adulthood, the crisis centres on generativity versus stagnation, and the radius of care comes to extend to members of the next generation. Erikson suggests this is a gradual progression, and that successfully resolving psychosocial crises within a prior stage allows for a better opportunity to successfully resolve subsequent stages. Thus, Erikson's model predicts that attaining intimacy in young adulthood will lead to increased generativity later in life. Using this theoretical framework as a guide, the current study explores narratives about "relationship-defining moments" with same-sex friends during young adulthood. Specifically, the current study investigates whether friendship intimacy coded from narratives predicts increased levels of generative concern 5 years later in young adults.

### **What is generativity?**

Erikson defined generativity as concern for the well-being of the future and next generation, and theorized that forming intimate relationships on young adulthood is a precursor to generativity in middle adulthood (Erikson, 1963). McAdams and de St. Aubin (1992) proposed that generativity is a multifaceted construct with seven interrelated components: cultural demand (i.e., cultural expectations for generative behaviour, inner desire (i.e., agency and communion motives), generative concern for the next generation, belief in the species, commitment to specific goals and actions, generative behaviours, and generative scripts within

life stories. The present study focuses on the generative concern component, which is thought to be an individual difference variable that represents concern for the well-being of the next generation. Generative concern is typically measured with the Loyola Generativity Scale (LGS; McAdams & de St. Aubin, 1992), a self-report measure containing items focused on caring for youth as a way of leaving a legacy of the self after death. Although generative concern is most prominent in middle adulthood, considerable evidence has shown that generative concern is prominent in the lives of many youth and emerging adults as well (Busch & Hofer, 2011; Lawford, Pratt, Hunsberger, & Pancer, 2005; McAdams, 2001; McAdams, de St. Aubin & Logan, 1993; Pratt & Lawford, 2014). These results suggest generativity may also be important to emerging and young adults. Thus, we focus on the development of generative concern in our sample of young adults.

### **Intimacy and generativity**

Intimacy represents the quality of interactions and the feeling of closeness, both of which are necessary components for successful relationships (Clark & Reis, 1988; Johnson et al., 2007; Laurenceau, Feldman-Barrett & Pietromonaco, 1998; Sullivan, 1953). Research suggests intimacy within peer relationships is an essential aspect of development (Sullivan, 1953; Johnson et al., 2007). In fact, the need to belong may represent a fundamental human striving (Baumeister & Leary, 1995), with higher levels of intimacy and generative concern being strong predictors of well-being (Busch & Hofer, 2012). In Erikson's psychosocial model, the exploration of personal relationships is common and relationships with romantic partners and peers emerge more strongly for emerging and young adults. Indeed, Conway and Holmes (2004) found that themes of intimacy arise in autobiographical narratives most frequently when stories are told about experiences during young adulthood.

In general, earlier stages of Erikson's model have been well-supported. For instance, Jones, Vaterlaus, Jackson, and Morrill (2014) found that successful resolution of earlier stages (i.e., trust, autonomy, initiative, industry, and identity) led to greater intimacy in the form of less friendship conflict during young adulthood. However, evidence supporting the intimacy-generativity link is sparse. Westermeyer (2004) generally supported Erikson's model longitudinally, showing that generativity was associated with successful marriage, work achievements, close friendships, altruistic behaviours, and mental health in men. Some research suggests that friendship intimacy is positively correlated with generative concern in young men (Christiansen & Palkovitz, 1998). Moreover, responsive caregiving between close friends contributed to greater generative concern over time one year later in adolescents (Lawford, Doyle, & Markiewicz, 2013). Busch & Hofer (2012) also found that Machiavellianism (i.e., a personality trait representing a tendency to manipulate others for personal gain) was negatively correlated with generative concern, which further suggests that problems in interpersonal relationships can lead to less generativity. Despite these important findings, comparatively little research has focused on the intimacy-generativity link. Thus, the present study will examine whether friendship intimacy coded from narratives predicts increased generative concern from age 26 to age 32.

### **The narrative approach**

Autobiographical narratives serve as a means to unify and give personal meaning to one's self-concept (McAdams & Pals, 2006) and have been used to investigate persons' life stories (McAdams, 2001). Smith and Sparkes (2008) summarize five perspectives to understand narrative identity (psychosocial, inter-subjective, storied resource, dialogic, and performative perspectives). The psychosocial perspective adopted by the present study tends to be used most

frequently in psychological research on generativity (McAdams & de St. Aubin, 1992; McAdams et al., 1993; McLean & Pratt, 2006). Within this perspective, narratives are a key component of identity, and research tends to study how the structure of narratives predicts other psychological variables (Smith & Sparkes, 2008). Further, research shows that autobiographical narratives are systematically related to Erikson's psychosocial stages. Conway and Holmes (2004) found that autobiographical narratives reflecting on the decade of 20 – 29 years of age centered most on themes of intimacy and isolation. These researchers also found that stories of middle adulthood and onwards (age 40 and up) had more themes of generativity. These results supported Erikson's model that intimacy precedes generativity. The present study used a relationship defining narrative task to elicit stories about participants' same-sex friends. Narratives used to elicit stories are based on the notion that autobiographical memories become organized around identity during adolescence (Habermas & Bluck, 2000) and continue through as a life story to adulthood. The way participants structure their narrative may reveal interesting aspects of their self-construction in terms of intimacy and generativity.

### **The Present Study**

Mackinnon, Pratt, Nosko & Norris (2011) examined the relationship between intimacy and generativity at age 26 using cross-sectional methods. They found that friendship intimacy coded from autobiographical narratives could predict generative concern over and above general well-being. However, Erikson's (1963) psychosocial model is a developmental model best tested with longitudinal methods. Thus, the present study re-visits and extends data presented in Mackinnon et al. (2011) by presenting findings from a 5-year longitudinal follow-up of this dataset at approximately age 32. In this way, we can determine if the findings in Mackinnon et al. (2011) hold when analyzed using a more rigorous longitudinal design and analysis strategy.

These data also provide a rare chance to test a seldom tested hypothesis regarding the intimacy-generativity link from Erikson's psychosocial theory, and the mixed quantitative and qualitative approach minimizes method variance by using multiple measurement approaches and provides complementarity by using the qualitative data to enrich and elaborate on the quantitative results (Creswell & Clark, 2007).

This research uses a 2-wave, 5-year longitudinal design. As in Mackinnon et al. (2011), autobiographical narratives on friendships were coded into quantitative codes for statistical analysis, using a 4-point ordinal coding scheme for friendship intimacy, and other constructs were measured with self-report questionnaires. Moreover, since generative concern is correlated with well-being more broadly (Busch & Hofer, 2012), optimism specifically (Ackerman, Zuroff & Moskowitz, 2000; Rothrauff & Cooney, 2008) and because it was entered in as a covariate in the initial Mackinnon et al. (2011) study on which these data are partially based, optimism will be included as a covariate in the current study. Moreover, because sex differences in generative concern sometimes emerge in young adulthood, with women tending to score higher than men (Karacan, 2014; McAdams & de St. Aubin, 1992; Pratt, Norris, Alisat, & Bisson, 2013), sex will also be added as a covariate. Thus, consistent with Erikson's (1963) psychosocial model, we hypothesized that friendship intimacy at age 26 would be positively related to generative concern at age 32 even when controlling for optimism, sex, and age 26 generative concern.

## **Method**

### **Participants**

The present study was part of a larger longitudinal study ( $N = 896$ ; Dumas, Lawford, Tieu, & Pratt, 2009; Jackson, Pratt, Hunsberger, & Pancer, 2005). The age 26 data are the same data presented in Mackinnon et al. (2011); however, the age 32 data have not been previously

reported. Participants were initially assessed at age 17 and were assessed again at ages 19, 23, 26 and 32. However, the same-sex friendship interviews of interest were assessed only at age 26 (wave 4) and 32 (wave 5). Thus, we examined only the age 26 and 32 data in the current study. Participants were contacted at all age points regardless of whether they participated in the previous wave. Therefore, a fluctuation of participation was observed (Age 19:  $N = 339$ ; Age 23:  $N = 290$ ; Age 26:  $N = 108$ ; Age 32:  $N = 112$ ). Participants at wave 4 were all very close to 26 years old ( $M = 26.46$ ,  $SD = 0.87$ ), 69% of participants were women, 74.1% were college educated or higher, 74.0% were employed full time when the study was conducted, 89.7% were born in Canada, and 86.9% spoke exclusively English at home. Participants at wave 5 were all very close to 32 years old ( $M = 31.52$ ,  $SD = .868$ ), 71.0% of participants were women, 90.3% were college educated or higher, 83.0% were employed full time, 92.0% were born in Canada, 87.4% spoke exclusively English at home, and 50.9% had at least one child. When comparing participants who dropped out of the study to those who remained at age 32, no differences were found in age 26 measures of sex, employment, country of birth and language spoken at home. However, participants who indicated a higher education level at age 26 were more likely to remain in the study at age 32 ( $p < .05$ ). Other than sex (reported below) these demographic variables were unrelated to age 26 questionnaires and are not discussed further.

## **Procedure**

The study consisted of two main parts and took participants approximately 2 hours to complete. Narratives were collected through a structured interview (1.5 hours) and demographic and survey measures were collected through an extended questionnaire (0.5 hours). During the interview, participants were asked to tell narratives about “relationship-defining moments” with a same-sex friend. If the participant failed to answer all the questions, the interviewer asked for

further information using standard probes. The exact prompt used by interviewers was as follows:

Speaking aloud, please tell me about a relationship defining memory or event that you have regarding your relationship with a same-sex friend. Your relationship-defining memory for your relationship with an individual named X, for example, may have been a time that you spent with X that showed you what your relationship was all about. Okay, so giving as much detail as possible, please tell me about a relationship defining memory or event that you have regarding a same-sex friend. Tell me exactly what happened, where it happened, approximately how long ago it happened, who was involved, what you did, what you were thinking and feeling, what impact this experience may have had upon you, and what this experience says about who you were or who you are.

Following the interview, participants completed a series of pen-and-paper questionnaires listed below. Themes in friendship intimacy were coded from the autobiographical narratives at a later date (see materials). Questionnaires and interviews pertinent to this study were identical at both waves, and items on multi-item questionnaires were summed into total scores before analysis.

## **Materials**

**Demographic measures.** A series of questions assessed demographic information such as sex. Socioeconomic status was assessed through participant education level and current employment status (i.e., “What is the highest level of education that you have completed to date?” and “Are you employed?”). Participants were asked to indicate the primary language spoken at their home and if they were born in Canada (i.e., “Primary language spoken at home” and “Were you born in Canada?”).

**Loyola Generativity Scale (LGS).** The LGS is a 20-item self-report questionnaire that measures generative motivations and behaviours. Sample items would be “I try to pass along the knowledge I have gained through my experiences” and “I think that I will be remembered for a long time after I die.” Items were measured on a 9-point scale ranging from 0 (*Very strongly disagree*) to 8 (*Very strongly agree*). Prior research supports the internal consistency and factorial validity of the LGS in young adult samples (McAdams & de St. Aubin, 1992).

**The Life Orientation Test (LOT).** The LOT is an 8-item self-report questionnaire that measures dispositional optimism. A sample item would be “In uncertain times, I usually expect the best” and items were measured on a 9-point scale ranging from 0 (*Very strongly disagree*) to 8 (*Very strongly agree*). Prior research supports the internal consistency, test-retest reliability, and convergent and discriminant validity of this scale (Scheier & Carver, 1985).

## **Narratives**

**Friendship intimacy.** Same-sex friendship narratives were coded using Mackinnon and colleagues (2011) 4-point coding scheme. The four themes, ordered from lowest to highest in terms of intimacy, were: (0) friendship conflict (friendship becomes weaker or dissolves entirely), (1) task orientation (primarily focused on shared activities or events rather than the friendship itself), (2) relationship building (friendship becoming stronger or closer – the forward progress of the relationship) and, (3) true friendship (supporting or being supported by a friend). Friendship conflict stories always told in such a way that the friendship ends in a less intimate state than when it started (e.g., drifting apart, conflict). Task orientation stories are generally positive in valence, but tell the reader little about relationship intimacy (e.g., a story about shopping). Relationship building stories are told in such a way that the friendship becomes more intimate over the course of the story (e.g., meeting friends for the first time, a good discussion).

True friendship stories are similar to relationship building stories in that the relationship becomes closer; however, these stories also describe one friend supporting the other through a tough time (e.g., illness, financial difficulties). The following are examples of each theme:

Friendship Conflict: "... I had tried to contact her several times by e-mail or by leaving voice mails and she never really got back to me and then one time when we did speak ... she sort of not so nicely informed me that her life was very full and very busy and I couldn't possibly understand what her life was like and [...] that basically she, she didn't have time for me. [...] so that's sort of where the friendship ended, which was really upsetting to me..."

Task Orientation: "I was a bridesmaid in one of my friend's weddings and uh, I planned her shower and her bachelorette, even though I wasn't the maid of honour. [...] it just felt really nice to be able to plan things for my friends and go off well..."

Relationship Building: "We've always been really close but I think just over the last like few months or so, we've just realized how close we actually are, and I think that we've sort of gotten to the point in our relationship where we can really like tell each other everything...but it's just been over the last few months that I feel like you know, I can be really, really open with her and tell her every little detail, no matter what it is..."

True Friendship: "...I was talking to her on the phone and she just sort of had this complete breakdown on the phone ... She was out of the country and the next morning, I sort of put this all together, have someone look after my kids and, and left the next day to go there and help her. [...] just sort of having

that, knowing that you just sort of have that one friend in the world in your life that you call in the middle of the night and say, like I need you, they're gonna come.”

Mackinnon, Sherry, Pratt & Smith (2014) used this measure of friendship intimacy with a different sample of university students, and found that friendship intimacy was correlated with friendship perceived social support, but not family or significant other perceived social support, supporting convergent and divergent validity for this scale. This intimacy measure also had good inter-rater reliability (ICC = .86), modest test-retest reliability over 130 days (Cramer's V = .28), and good predictive validity as it interacted with perfectionism to predict changes in depressive affect 130 days later. Moreover, Mackinnon et al. (2011) found that friendship intimacy at age 26 was strongly correlated with another narrative measure of intimacy ( $r = .66$ ), further supporting convergent validity.

Mackinnon et al. (2011) found that the age 26 friendship intimacy codes had good inter-rater reliability (ICC = .81). In the present study, inter-rater reliability was achieved between two of the authors by having each coder independently code 100% of the narratives at age 32 ( $n = 107$ ). The intraclass correlation (absolute agreement) was .83, 95% CI [.76, .88], suggesting strong inter-rater reliability. One of the coders was the same coder who coded the original age 26 narratives. When there were disagreements between coders, the original coder's ratings were used.

## Results

**Missing data and statistical assumptions.** Approximately 27.2% of data were missing. Missing data were handled using multiple imputation (20 imputed datasets). Multiple imputation is generally less biased than listwise deletion and single imputation methods (Graham, 2009).

Otherwise, data met assumptions of linear regression (i.e., normally distributed residuals, linearity, no extreme outliers).

**Descriptive statistics and bivariate correlations.** Means and standard deviations, as well as the frequencies of the same-sex friendship and romantic relationship narrative codes are found in Table 1. Correlations and reliabilities are presented in Table 2. Internal consistencies were excellent, with alphas ranging from .86 to .88 across both waves. Both optimism and generative concern exhibited significant test-retest stability; however, friendship intimacy was not stable over this time frame (i.e., age 26 and age 32 friendship intimacy were uncorrelated). As expected, generative concern was correlated with age 26 optimism, and friendship intimacy ( $r$ s from .28 to .44). However, age 32 friendship intimacy was uncorrelated with generative concern ( $p$ s > .05). Overall, however, these correlations supported moving forward with a multiple regression analysis.

**Multiple regression.** A hierarchical multiple regression predicting wave 5 generative concern was conducted in three steps (see Table 3). At step 1, age 26 generative concern strongly predicted age 32 generative concern. Controlling for age 26 generative concern changes the interpretation at subsequent steps, such that we are now predicting rank-order increases in generative concern over these 5 years. At step 2, both sex and optimism were predictors of age 32 generative concern. Women and people high in optimism saw greater increases in generative concern from age 26 to age 32. At Step 3, friendship intimacy was entered in as a predictor. Friendship intimacy marginally predicted increases in generative concern ( $p = .052$ ), with higher levels of intimacy at 26 predicting larger increases in generative concern. Overall, the final model predicted 51% of the variance in age 32 generative concern.

## Discussion

This study aimed to test Erikson's (1963) general psychosocial model by studying the link between friendship intimacy and generativity. The current study extended prior research by examining the relationship between intimacy and generative concern as people develop from emerging to young adulthood. A goal of the current study was to see whether intimacy in the narratives of young adults would predict subsequent levels of generative concern 5 years later. Results indicated that friendship intimacy was positively correlated with age 32 generative concern. However, friendship intimacy was only a marginally significant predictor of rank-order increases in generative concern. Because the effect size was small and because the p-value was so close to our critical value, interpretation of this effect is somewhat uncertain. Thus, though it is clear that friendship intimacy predicts age 32 generative concern (see Table 2), the present data provide weaker evidence to support friendship intimacy as a predictor of rank-order increases in generative concern over 5 years. It is possible that this relationship is more important at age 26 when participants are beginning to transition out of emerging adulthood (ages 18-25; Arnett, 2000). Moreover, it is possible that the effect is indirect, with friendship intimacy predicting age 26 generative concern, which in turn contributes to age 32 generative concern. Nonetheless, we believe the results are promising and generally consistent with Erikson's theory. Moreover, the value of 5-year longitudinal data on a non-college student sample provides an important contribution to this understudied topic. The current research also highlights the importance of studying generativity at developmental periods other than midlife (Lawford et al., 2005; Mackinnon et al., 2011). Developing close relationships with others earlier in life thus may allow people to generate a broader radius of care in the form of generative concern in adulthood.

Women experienced greater increases in generative concern over 5 years than men. Though past cross-sectional studies have shown that women tend to have higher levels of

generative concern (Ackerman et al., 2000; McAdams & de St. Aubin, 1992; Pratt et al., 2013), this study is one of the first to show this relationship longitudinally. One of the key components of generativity in Erikson's (1963) psychosocial model is caring for children. Most couples in Canada tend to have their first child around age 28 (Milan, 2008); accordingly, 50.9% of participants in the present sample had children by age 32. Thus, the gender difference observed in the present study may be in part due to the tendency for women to take on more parenting duties than men. That is, women may emerge as having higher generative concern in this sample because of societal expectations and pressures to care for children (Karacan, 2014).

Higher levels of optimism also predicted increases in generativity over time. Optimism represents a more trait-like tendency to have a positive outlook on life (Schier & Carver, 1985). Prior research has demonstrated that people higher in optimism tend to experience increasing trajectories of well-being over time (Avey, Wernsing, & Mhatre, 2011). Given the close links between well-being and generativity (McAdams & Logan, 2004), it seems reasonable that optimism also predicts increases in generativity over time. It is possible that a generally positive outlook on life may encourage people to develop a broader radius of care because there is less fear of failure or rejection. Believing that one's actions will likely succeed and make a difference may provide the intrinsic motivation needed to provide generative care for the next generation. Thus, optimism – along with gender and intimacy – also appears important to predicting generativity in young adults.

### **Intimacy rank-order stability**

Despite past studies showing modest rank-order stability for the friendship intimacy scale over 130 days (Mackinnon et al., 2014), the lack of rank-order stability for friendship intimacy was a concern in the present study. We explored the qualitative data to try and understand why

the test-retest correlation for friendship intimacy over 5 years was non-significant. Narratives at both waves were compared to see if participants told the same story. If participants tell different stories at both waves, this might partially explain the poor test-retest reliability in the current study. Of those that participated at age 26 and age 32, 88.6% told a different story at each time point and 11.4% told the same or similar story at each time point. Therefore, it is evident that participants generally produced different narratives at each wave which might partially explain the lack of stability over 5 years. After further examination of participants' narratives at each wave, it was evident that the way in which participants told friendship stories at age 32 often differed from when they told friendship stories at age 26, even when they told the same story. Below is an example of a participant who told the same story at wave 4 and wave 5 but in a different manner, resulting in a different intimacy code.

**Wave 4:** So, one of my friends growing up in High School. Well, I went through a lot of things with this friend...It was a tough situation, we were best friends for several years [...] we went to [destination] and a guy tried to pick a fight with us and he pulled the guy off of me. [...] He found out about a week later that he had some bruising, and he thought "bruising? The guy didn't grab me that hard", and after he found out that he had leukemia. So, within a one month period we went from not speaking, to speaking, to finding out the guy is going to die, and it was pretty tough...Literally, we were there for each other until death...It was cool, he was probably my closest friend, same-sex relationship. (True Friendship)

**Wave 5:** Unfortunately it, it ended badly... my closest friend throughout high school, [...] I guess one guy wanted to show how tough he was to the other

guy beside him and started to pick a fight and um, [...] we ended up going out in the parking lot [...] my friend, friend grabbed him and they both went collar to collar and um, and knocked the pop out of his hand and told the guy to stop being an idiot [...] And um, anyways, so, it was defining more in so after...Uh, turns out that um, my friend bruised really easily and he went to the doctor cause he didn't understand why he would bruise so easily [...] it turned out that he had leukemia. Uh, and his blood count was really low so that's kinda how he found out, which is good in the sense that it, he probably would have bled out in another week or two but he still ended up dying of it, but uh, at least it gave him a few more months...(Task Orientation)

In this first narrative, the story focuses on true friendship and “being there” for one another until death. In comparison, the second narrative focuses on the events rather than the friendship, and is generally devoid of emotional expression. If participants changed how they told the same story at each wave, this might further reduce test-retest stability. McAdams and colleagues (2006) examined narratives at 3 time-points (start of study, 3 months later, and 3 years later) for a variety of themes, one being communion. Communion was defined as motivations for love, intimacy and belongingness (McAdams et al., 2006) which broadly encompasses and relates to the current study's operationalization of friendship intimacy. McAdams et al. (2006) found short-term (3 months) rank-order stability for the communion theme, but this did not hold for a 3-year time lag. A possible explanation is that one's development of intimacy is continual, changing over long periods of time, but having some stability over short periods. Young adults may come to terms with past conflicts or see old experiences in new ways, but this process appears to take a fairly long time. The stability of

these data might also be reduced by our use of a single “relationship defining” narrative; by aggregating codes in several narratives (e.g., high points, low points, turning points, etc.) into a single composite score, reliability might be improved in a similar manner to adding additional items to a self-report questionnaire.

### **Limitations and future directions**

The current study has limitations. Participants were not required to provide a narrative about the same topic at both time points – and indeed, 5 years later most participants would likely not remember what story they originally told. It would have been useful to examine if rank-order stability would improve if participants were asked to revisit the same event. The present study only examined generative concern, which represents only one facet of generativity (McAdams & de St. Aubin, 1992). Similar to Mackinnon et al. (2011), we did not measure additional aspects of generativity and our sample was fairly homogeneous such that participants were primarily born in Canada, English speaking and well-educated. Furthermore, friendship narratives were only collected at two time points; in general, 3 or more waves of data allows for more rigorous statistical analysis (e.g., growth curves).

Despite these limitations, the current research contributes to the literature through the use of a more rigorous, longitudinal design. Erikson’s (1963) psychosocial model is a developmental model best tested with longitudinal methods. Thus, the present study extended prior research by examining the relationship between friendship intimacy and generative concern as people develop from emerging to young adulthood. Notably, friendship intimacy was able to marginally predict increases in generative concern over 5 years, as Erikson’s theory predicted. As people transition to adulthood, perspectives of past events may change. It would be beneficial for researchers to investigate how these stories might transform in older adulthood when participants

are asked to either re-tell or reflect on their past narratives. Authoring a life story is a life-long endeavour, and searching for developmental patterns in these stories remains a fascinating, understudied topic for future research.

## References

- Ackerman, S., Zuroff, D. C., & Moskowitz, D. S. (2000). Generativity in midlife and young adults: Links to agency, communion, and subjective well-being. *The International Journal of Aging & Human Development*, *50*, 17–41. doi:10.2190/9F51-LR6T-JHRJ-2QW6
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*, 469-480. doi:10.1037/0003-066X.55.5.469
- Avey, J. B., Wernsing, T. S., & Mhatre, K. H. (2011). A longitudinal analysis of positive psychological constructs and emotions on stress, anxiety, and well-being. *Journal of Leadership & Organizational Studies*, *18*, 216-228. doi:10.1177/1548051810397368
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 497-529. doi:10.1037/0033-2909.117.3.497
- Busch, H., & Hofer, J. (2011). Identity, prosocial behavior, and generative concern in German and Cameroonian Nso adolescents. *Journal of Adolescence*, *34*, 629-638. doi:10.1016/j.adolescence.2010.09.009
- Busch, H., & Hofer, J. (2012). Self-regulation and milestones of adult development: Intimacy and generativity. *Developmental Psychology*, *48*, 282-293. doi:10.1037/a0025521
- Christiansen, S. L., & Palkovitz, R. (1998). Exploring Erikson's psychosocial theory of development: Generativity and its relationship to paternal identity, intimacy, and involvement in childcare. *Journal of Men's Studies*, *7*, 133–156. doi:10.3149/jms.0701.133

- Clark, M. S., & Reis, H. T. (1988). Interpersonal processes in close relationships. *Annual Review of Psychology, 39*, 609-672. doi:10.1146/annurev.ps.39.020188.003141
- Conway, M. A., & Holmes, A. (2004). Psychosocial stages and the accessibility of autobiographical memories across the life cycle. *Journal of Personality, 72*, 461-480. doi:10.1111/j.0022-3506.2004.00269.x
- Creswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage Publications.
- Dumas, T. M., Lawford, H., Tieu, T., & Pratt, M. W. (2009). Positive parenting in adolescence and its relation to low point narration and identity status in emerging adulthood: A longitudinal analysis. *Developmental Psychology, 45*, 1531-1544. doi: 10.1037/a0017360
- Erikson, E. H. (1963). *Childhood and society (2nd ed.)*. New York: Norton.
- Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology, 60*, 549-576. doi:10.1146/annurev.psych.58.110405.085530
- Habermas, T., & Bluck, S. (2000). Getting a life: The emergence of the life story in adolescence. *Psychological Bulletin, 126*, 748-769. doi:10.1037/0033-2909.126.5.748
- Jackson, L. M., Pratt, M. W., Hunsberger, B., & Pancer, S. M. (2005). Optimism as a mediator of the relation between perceived parental authoritativeness and adjustment among adolescents: Finding the sunny side of the street. *Social Development, 14*, 273-304. doi:10.1111/j.1467-9507.2005.00302.x
- Johnson, H. D., Brady, E., McNair, R., Congdon, D., Niznik, J., & Anderson, S. (2007). Identity as a moderator of gender differences in the emotional closeness of emerging adults same- and cross-sex friendships. *Adolescence, 42*, 1-23.

- Jones, R. M., Vaterlaus, J. M., Jackson, M. A., & Morrill, T. B. (2014). Friendship characteristics, psychosocial development, and adolescent identity formation. *Personal Relationships, 21*, 51-67. doi: 10.1111/pere.12017
- Karacan, E. (2014). Timing of parenthood and generativity development: An examination of age and gender effects in Turkish sample. *Journal of Adult Development*. Advance online publication. doi:10.1007/s10804-014-9192-z
- Laurenceau, J., Feldman-Barrett, L. F., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal process: The importance of self-disclosure, partner disclosure, and perceived partner responsiveness in interpersonal exchanges. *Journal of Personality and Social Psychology, 74*, 1238-1251. doi:10.1037/0022-3514.74.5.1238
- Lawford, H. L., Doyle, A., & Markiewicz, D. (2013). The association between early generative concern and caregiving with friends from early to middle adolescence. *Journal of Youth and Adolescence, 42*, 1847-1857. doi: 10.1007/s10964-012-9888-y
- Lawford, H., Pratt, M. W., Hunsberger, B., & Pancer, M. S. (2005). Adolescent generativity: A longitudinal study of two possible contexts for learning concern for future generations. *Journal of Research on Adolescence, 15*, 261-273. doi:10.1111/j.1532-7795.2005.00096.x
- Mackinnon, S. P., Nosko, A., Pratt, M. W., & Norris, J. E. (2011). Intimacy in young adults' narratives of romance and friendship predicts Eriksonian generativity: A mixed method analysis. *Journal of Personality, 79*, 587-617. doi: 10.1111/j.1467-6494.2011.00692.x
- Mackinnon, S. P., Sherry, S. B., & Pratt, M. W., & Smith, M. M. (2014). Perfectionism, friendship intimacy and negative affect: A longitudinal study using mixed methods. *Canadian Journal of Behavioral Science, 46*, 49-59. doi: 10.1037/a0033764

- McAdams, D. P. (2001). The psychology of life stories. *Review of General Psychology*, 5, 100-122. doi:10.1037/1089-2680.5.2.100
- McAdams, D. P., Bauer, J. J., Sakaeda, A. R., Anyidoho, N., Machado, M., Magrino-Failla, K., & ... Pals, J. L. (2006). Continuity and change in the life story: A longitudinal study of autobiographical memories in emerging adulthood. *Journal of Personality*, 74, 1371-1400. doi:10.1111/j.1467-6494.2006.00412.x
- McAdams, D. P., & de St. Aubin, E. (1992). A theory of generativity and its assessment through self-report, behavioral acts, and narrative themes in autobiography. *Journal of Personality and Social Psychology*, 62, 1003-1015. doi:10.1037/0022-3514.62.6.1003
- McAdams, D. P., de St. Aubin, E., & Logan, R. L. (1993). Generativity among young, midlife, and older adults. *Psychology and Aging*, 8, 221-230. doi: 10.1037/0882-7974.8.2.221
- McAdams, D. P., & Logan, R. L. (2004). What is generativity? In E. de St. Aubin, D. P. McAdams, T. Kim (Eds.), *The generative society: Caring for future generations* (pp. 15-31). Washington, DC, US: American Psychological Association. doi:10.1037/10622-002
- McAdams, D. P., & Pals, J. L. (2006). A new big five: Fundamental principles for an integrative science of personality. *American Psychologist*, 61, 204-217. doi:10.1037/0003-066X.61.3.204
- McLean, K. C., & Pratt, M. W. (2006). Life's little (and big) lessons: Identity statuses and meaning-making in the turning point narratives of emerging adults. *Developmental Psychology*, 42, 714-722. doi: 10.1037/0012-1649.42.4.714
- Milan, A. (2008). *Fertility: Overview, 2008*. Retrieved December 12, 2014 from <http://www.statcan.gc.ca/pub/91-209-x/2011001/article/11513-eng.htm>

- Pratt, M. W., & Lawford, H. L. (2014). Early generativity and types of civic engagement in adolescence and emerging adulthood. In L. M. Padilla-Walker & G. Carlo (Ed.), (pp. 410-436). *Prosocial Development: A Multidimensional Approach*, New York: Oxford University Press.
- Pratt, M. W., Norris, J. E., Alisat, S., & Bisson, E. (2013). Earth mothers (and fathers): Examining generativity and environmental concerns in adolescents and their parents. *Journal of Moral Education, 42*, 12-27. doi:10.1080/03057240.2012.714751
- Rothrauff, T., & Cooney, T. M. (2008). The role of generativity in psychological well-being: Does it differ for childless adults and parents? *Journal of Adult Development, 15*, 148-159. doi:10.1007/s10804-008-9046-7
- Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology, 4*, 219-247. doi:10.1037/0278-6133.4.3.219
- Smith, B., & Sparkes, A. C. (2008). Contrasting perspectives on narrating selves and identities: An invitation to dialogue. *Qualitative Research, 8*, 5–35. doi: 10.1177/1468794107085221
- Sullivan, H. S. (1953). *The interpersonal theory of psychiatry*. New York: W W Norton & Co.
- Westermeyer, J. F. (2004). Predictors and characteristics of Erikson's life cycle model among men: A 32-year longitudinal study. *The International Journal of Aging & Human Development, 58*, 29-48. doi:10.2190/3VRW-6YP5-PX9T-H0UH



Table 1

Descriptive statistics and frequencies

Variable	M (SD)	Frequency (%)	M (SD)	Frequency (%)
	Wave 4		Wave 5	
Generative Concern	133.96 (19.82)		134.19 (21.23)	
Optimism	52.05 (10.53)		53.25 (11.28)	
Friendship Intimacy	1.89 (1.16)		1.66 (1.09)	
Friendship Conflict		26 (17.7%)		29 (19.7%)
Task Orientation		32 (21.8%)		34 (23.1%)
Relationship Building		22 (15.0%)		43 (29.3%)
True Friendship		67 (45.6%)		41 (27.9%)

Note.  $N = 147$  after imputation. Data were imputed using multiple imputation ( $n = 20$ ) before calculating means. Frequencies were rounded to a nearest whole number when pooling across imputed datasets.

Table 2: *Bivariate correlations and alpha reliabilities.*

	1	2	3	4	5	6	7
1. Sex	--						
2. Age 26 Generative Concern	.20*	.87					
3. Age 26 Friendship Intimacy	.09	.29**	--				
4. Age 26 Optimism	-.03	.44***	.07	.86			
5. Age 32 Generative Concern	.28**	.65***	.33**	.44***	.88		
6. Age 32 Friendship Intimacy	-.03	.03	-.01	.02	.06	--	
7. Age 32 Optimism	.00	.34*	.09	.60***	.52***	.02	.88

*Note:*  $N = 147$  after imputation. Cronbach's alphas for generative concern and optimism are listed on the diagonal.

\*  $p < .05$ ; \*\*  $p < .01$



Table 3

*Hierarchical multiple regression predicting age 32 generative concern*

	<i>B (SE)</i>	<i>95% CI <math>\beta</math></i>	$\Delta R^2$
Step 1			.42***
Age 26 Generative Concern	0.69 (0.12)***	.64 [.46, .83]	
Step 2			.06*
Age 26 Generative Concern	0.55 (0.13)***	.52 [.29, .74]	
Age 26 Optimism	0.43 (0.20)*	.21 [.02, .41]	
Sex	-8.01 (3.72)*	-.38 [-.73, -.04]	
Step 3			.03†
Age 26 Generative Concern	0.50 (0.14)**	.47 [.23, .70]	
Age 26 Optimism	0.46 (0.19)*	.23 [.04, .41]	
Sex	-7.89 (3.64)*	-.37 [-.03, -.28]	
Age 26 Friendship Intimacy	2.97 (1.46)*	.16 [.00, .32]	

*Note.*  $R^2$  values were calculated by averaging across all 20 imputed datasets ( $N = 147$ ). Sex was dummy-coded with 0 = female and 1 = male.

† $p = .052$ , \* $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .