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Paths to success in young adulthood from mental health and life transitions in emerging adulthood

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Abstract

This study followed a school-based sample ($N = 920$) to explore how trajectories of depressive symptoms and expressed anger from age 18 to 25, along with important life transitions, predicted life and career satisfaction at age 32. A two-group (women and men) bivariate growth model revealed that higher depressive symptoms at age 18 predicted lower life satisfaction in men and women, and lower career satisfaction in women. Slower declines across emerging adulthood in women's depressive symptoms predicted lower life satisfaction, but slower declines in women's expressed anger predicted higher career satisfaction. Marital and employment-related transitions were differentially related to men's and women's life and career satisfaction. Paths to success in young adulthood are diverse and gendered.

Keywords

anger, depressive symptoms, emerging adulthood, latent growth model, trajectories

The experiences of emerging adulthood (ages 18 to 25) often entail transitions in living arrangements, education, employment, and relationships, creating challenges and opportunities that result in a diversity of paths through this period (Arnett, 2000) that can alter trajectories of mental health in positive and negative directions (Schulenberg, Sameroff, & Cicchetti, 2004). How these trajectories relate to successful functioning in young adulthood (the early thirties) is a key developmental issue, and is important for identifying targets of and optimal timing for interventions aimed at improving young adult outcomes (Schulenberg & Zarrett, 2006). To better understand how mental health experiences in emerging adulthood set the stage for success in young adulthood, we ask: To what extent do trajectories of depressive symptoms and expressed anger from age 18 to 25 predict life and career satisfaction at age 32?

Studies in North America document a high prevalence of psychiatric problems among people in their twenties (Kessler et al., 2005; Statistics Canada, 2002) yet there is also mounting evidence that mental health improves for the average emerging adult (Galambos, Barker, & Krahn, 2006; Meadows, Brown, & Elder, 2006; Schulenberg, O'Malley, Bachman, & Johnston, 2005; Tanner et al., 2007), a disconnect that draws attention to heterogeneity in mental health trajectories produced by stable individual differences as well as life changes. For example, depressive symptoms decline faster in young people with highly educated parents and those who report more conflict with their parents as adolescents (Galambos et al., 2006). Increasing stress and diminishing levels of parental support are associated with increasing depressive symptoms (Meadows et al., 2006), and low academic achievement, parental depressive symptoms, and negative life events in childhood predict growth in men's depression trajectories from age 15 to 24 (Stoolmiller, Kim, & Capaldi, 2005).

Diversity in trajectories suggests that mental health is a "moving target". That is, mental health status at one point may not reflect how the young person is coping with the transition to adulthood, as this could be a low point in an otherwise healthy trajectory (a "developmental disturbance"), or the start of escalating problems (Schulenberg & Zarrett, 2006). As such, it is critical to track individual trajectories. In the current study, depressive symptoms and expressed anger at multiple times from age 18 to 25 were selected as mental health indicators, reflecting negative subjective experiences that can lead to poor behavioral, physical, and psychosocial outcomes (Sigfussdottier, Farkas, & Silver, 2004; Suls & Bunde, 2005).

Mental health pathways to successful functioning in young adulthood

An underexplored yet core developmental question concerns the link between mental health in emerging adulthood and successful functioning in young adulthood (Burt, Obradović, Long, & Masten, 2008; Schulenberg & Zarrett, 2006). It is clear that mental health in adolescence foreshadows adult outcomes. For example, men's poorer mental health at age 14 was associated with obsessive-compulsive tendencies, depression, and paranoid ideation at age 48 (Offer, Kaiz, Howard, & Bennett, 1998). In addition, major depression in adolescence was likely to resurface later in the lifespan (Kovacs, 1996). Aggression in childhood and in the teens predicted aggression in early to middle adulthood (Kokko, Pulkkinen, Huesmann, Dubow, & Boxer, 2009). Although these studies speak to important continuities in internalizing symptoms (i.e., depression) and externalizing symptoms (i.e., aggression) they do not tell us how mental health *trajectories* through emerging adulthood

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predict later functioning. Furthermore, the focus of such studies on associations of like constructs such as depression or aggression neglects the complicated processes involving multiple domains that are likely involved in the etiology and sequelae of psychopathology (Burt et al., 2008). One study of 10-year-olds followed to age 30 showed that higher internalizing symptoms at age 17 predicted increases in externalizing symptoms between age 17 and 20, and lower social competence at age 20 predicted increases in internalizing symptoms between age 20 and 30 (Burt et al.). These relations highlight the potential value of observing how depressive symptoms and expressed anger predict dimensions of successful functioning in adulthood.

The Burt et al. (2008) study also suggests the significance of learning how depressive symptoms and expressed anger are coupled over time and drive growth in one another. Whether depression and anger are independent emotions with separate pathways to important life outcomes is a question left open by the absence of research that models depression and anger simultaneously (Suls & Bunde, 2005). Short-term multi-wave studies show that depression and anger covary across days (Robbins & Tanck, 1997) and weeks (Smith & Mumma, 2008). How they unfold together across emerging adulthood is a question examined in the current study.

In this study, successful functioning in young adulthood is indicated by life and career satisfaction. Life satisfaction is a global, cognitive evaluation of one's quality of life, an important component of subjective well-being, and a marker of self-perceived success (Pavot & Diener, 2008). It correlates strongly in the negative direction with depression and shows significant but weaker associations with anger (Koivumaa-Honkanen, Kaprio, Honkanen, Viinamäki, & Koskenvuo, 2004; Schimmack, Oishi, Furr, & Funder, 2004). Individuals who had major depressive episodes as adolescents reported reduced life satisfaction at age 24 (Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2003). In a study of young to middle-aged healthy adults, low life satisfaction predicted depression 15 years later (Koivumaa-Honkanen et al., 2004). Considering these findings, life satisfaction is ideal for gauging success in young adulthood as a function of trajectories of depressive symptoms and expressed anger through emerging adulthood.

Exploring and preparing for meaningful work are central to identity development throughout the twenties. Indeed, finding satisfying, stable work and identifying one's work as a "career" are important milestones in a successful transition to adulthood (Arnett, 2004; Mortimer,Vuolo, Staff, Wakefield, & Xie, 2008), Thus, career satisfaction, a subjective indicator of career success (Judge, Cable, Boudreau, & Bretz, 1995), is particularly relevant to young adults in their thirties (Mortimer et al., 2008). Career satisfaction is a domain-specific indicator, related to but distinct from life satisfaction (Pavot & Diener, 2008). We are not aware of any studies linking emerging adult mental health trajectories to later career satisfaction, but one study found a connection between poor mental health in the early twenties and unemployment four years later (Taris, 2002). Others showed that aggression in childhood predicted long-term unemployment between ages 27 and 36 (Kokko & Pulkkinen, 2000) and downward occupational mobility by age 40 (Caspi, Elder, & Bem, 1987).

Life and career satisfaction as a function of life transitions and gender

Key developmental tasks of the transition to adulthood include completing an education, obtaining employment, getting married, and becoming a parent (Cohen, Kasen, Chen, Hartmark, & Gordon, 2003; Schulenberg et al., 2005). Psychological well-being is higher among the steadily employed and married (Galambos et al., 2006; Roberts & Bengston, 1993), and increases in the mid-twenties for single, non-parent full-time students (Schulenberg et al., 2005). Parenthood is not a universally positive experience (Galambos & Krahn, 2008), and could affect life and career satisfaction. Considering the possible impact of life transitions on young adult functioning, we examine university education, unemployment, marriage, and parenthood as predictors of life and career satisfaction at age 32.

There is a well-documented gender difference in mental health that favors internalizing problems in girls and externalizing problems in boys (Galambos, Berenbaum, & McHale, 2009). It follows naturally, then, that mental health pathways to young adult functioning may be similarly gendered. Although the gender gap in depression that appears by age 14 (Wade, Cairney, & Pevalin, 2002) may lessen by age 25 (Galambos et al., 2006), it is still present in the later twenties and early thirties (Galambos & Krahn, 2008). Higher levels of depressive symptoms in emerging adult women might lead to stronger connections with young adult life and career satisfaction than would be expected for men. Men tend to express anger through physical and verbal aggression (Archer, 2004), whereas women tend to engage in non-explosive, non-injurious behaviors such as retreating or giving the silent treatment (Campbell & Muncer, 2008). Men's expressions of anger, thus, might impair relationships and impede career progress, leading to lower life and career satisfaction.

The current study

The current research builds on a study by Galambos et al. (2006) that showed improvements in depressive symptoms and expressed anger from age 18 to 25 through separate growth models in which initial levels (the intercepts) and rates of change (the slopes) were examined as a function of gender, family, and school variables assessed at age 18. Covariates of depression and anger, such as employment and marital status, were also explored. New to the current study are life and career satisfaction measures at age 32. The intercepts and slopes of depressive symptoms and expressed anger are not the outcomes of interest but instead serve as predictors of life and career satisfaction. Also new is the inclusion of educational, employment, marital, and parenthood experiences up to age 32 as predictors of life and career satisfaction. The intercepts and slopes of depressive symptoms and expressed anger are included in a two-group (male and female), bivariate (depressive symptoms-expressed anger) growth model, controlling for family and school variables considered in the Galambos et al. study, and educational, employment, marital, and parenthood transitions (see Figure 1). This bivariate model also assesses how depression and anger covary across time, which was not examined previously.

Four research questions guided this study. First, will initial levels and trajectories of depressive symptoms and expressed anger from age 18 to 25 predict life and career satisfaction at age 32? Second, will university, unemployment, marital, and parenthood transitions be associated with life and career satisfaction? Third, will there be gendered pathways to life and career satisfaction? Finally, do depressive symptoms and expressed anger covary across emerging adulthood?

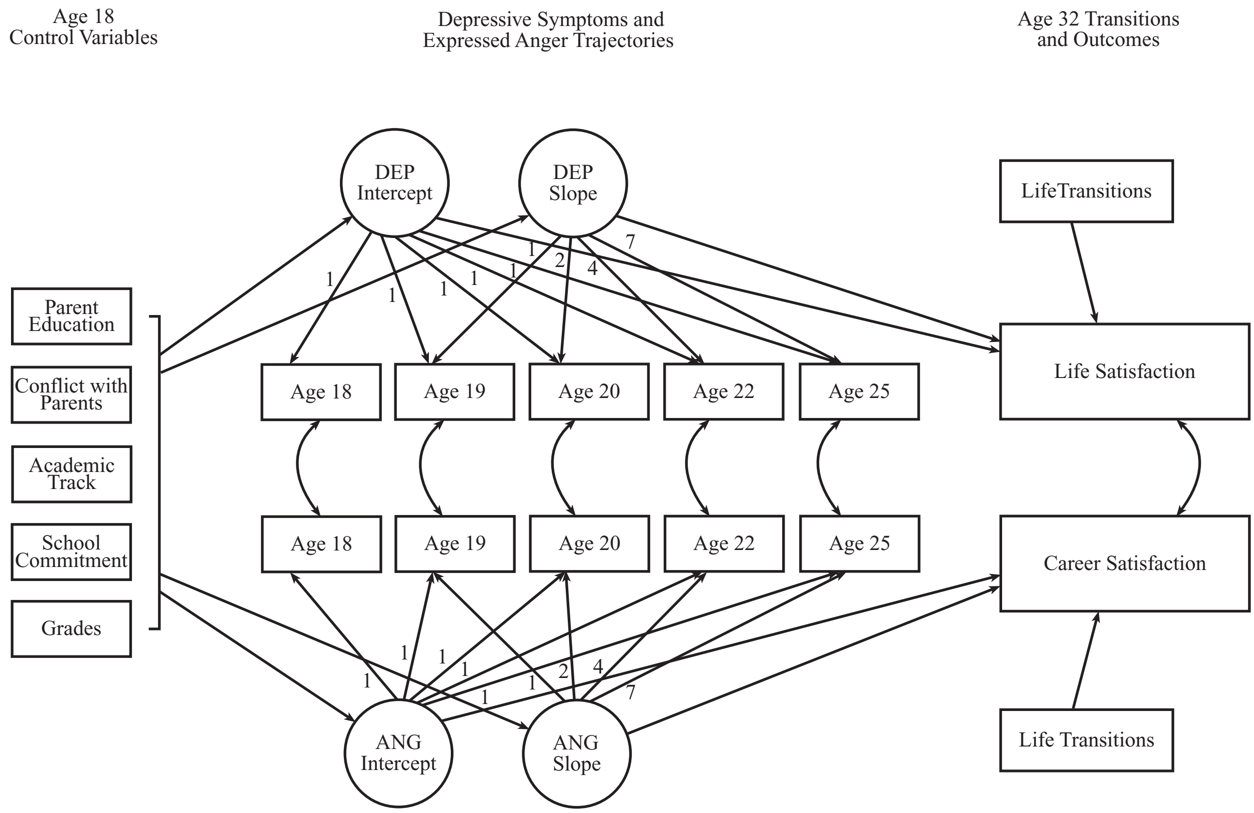

Figure 1. Bivariate growth model regressing life and career satisfaction at age 32 on latent growth factors for depressive symptoms (DEP) and expressed anger (ANG), controlling for effects of family and school variables at age 18 and life transitions at age 32.

Method

Sample

In Spring 1985, 983 Grade 12 students (52% men) recruited from a mix of 66 academic and vocational classrooms in six high schools in a large western Canadian city completed questionnaires in class. The schools were chosen to represent a cross-section of middle- and working-class neighborhoods. Follow-up questionnaires were mailed to all study participants a year later (1986) and two-thirds ($n = 665$) responded. In 1987, 1989, and 1992, follow-up questionnaires were mailed to only those participants who had completed a questionnaire in the previous wave of data collection. This strategy resulted in successively smaller samples in 1987 ($n = 547$), 1989 ($n = 503$), and 1992 ($n = 404$).

Eighty percent of the 1985 sample members were born in Canada; the rest had immigrated to Canada with their parents from a wide range of other countries. Fifteen percent of the 1986 sample members indicated that they were non-White. Reflecting the socioeconomic diversity of the community from which the sample was obtained, 10% came from families in which both parents had a university degree, whereas 16% reported that one parent had completed university. Half of participants (51%) self-reported their family's financial position as "average", 9% rated it as "below average", and 39% rated it as "above average" (1% did not respond). Essentially, the sample was representative of western Canadian urban youth born in 1967, but not necessarily of rural Canadian youth or young people living in more ethnically diverse central Canadian cities. Further information about the young people this panel study followed into emerging adulthood (most were 25 years of age in 1992), including additional family background and educational attainment profiles, is reported elsewhere (Galambos et al., 2006).

In 1999, a follow-up telephone survey produced a sample of 509 young adults (a response rate of 52% after 14 years), including 91 who only completed the 1985 survey, 58 who last participated in 1986; 13 who last responded in 1987; and 53 who remained in the study until 1989. A total of 294 participated in all five previous waves of data collection. By 1999, participants were 32.2 years old on average ($SD = 0.76$), and 49% were men.

In the current study, as in the Galambos et al. (2006) research, cases were omitted when no measure of depressive symptoms or expressed anger was available or when data were missing for key predictor variables at age 18. This brought the sample size to 920 cases. Of these 920 individuals, 483 reported on life satisfaction and 482 reported on career satisfaction in 1999. Attrition between 1985 and 1992 was previously evaluated (see Galambos et al., 2006), with no significant differences between study dropouts and continuing participants in depression or anger. For the current study, a series of t tests comparing depression and anger scores at all earlier ages for those who were present and those who were missing at age 32 also revealed no significant differences. Although previous analyses showed that individuals who dropped out of the study between 1985 and 1992 were more likely to be male, have less educated parents, be in a lower academic track, and have lower grades, the only differences still evident at age 32 (when some earlier dropouts rejoined the study) were for gender and parent education. Taken together, these comparisons suggest that the results are not likely to be biased by attrition.

Measures

Control variables.

Two family (parent education, conflict with parents) and three school (academic track, school commitment, self-reported grades) variables were assessed at age 18, as described in Galambos et al. (2006). Parent education was coded as 0 (no university degree), 1 (one parent with university degree), or 2 (two parents with university degrees) ($M = .37$, $SD = .66$). Conflict with parents was the mean frequency in the previous few months of disagreements on 10 issues (e.g., "spending money", "household chores") rated on a scale ranging from 1 (never) to 5 (almost always). Alpha was .83 ($M = 2.12$, $SD = .70$). Academic track was coded as 0 (participant in non-academic track such as business, trades and services) or 1 (participant in academic track, or university stream) ($M = .63$, $SD = .48$). School commitment was the mean of six items (e.g., "Overall, I have enjoyed my time in high school"), rated on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Alpha was .59 ($M = 3.65$, $SD = .63$). Grades were reported by the participant for the past school year as 1 (mainly As; 80% or above), 2 (mainly Bs; 70% to 79%), 3 (mainly Cs; 60% to 69%), 4 (mainly Ds; 50% to 59%), or 5 (mainly Fs; under 50%). This item was reverse coded so that a higher value indicated better grades ($M = 3.30$, $SD = .88$).

Depressive symptoms and expressed anger.

These constructs were measured five times, at ages 18, 19, 20, 22, and 25, as reported by Galambos et al. (2006). Four items from the 20-item Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) indicated "how often in the past few months" participants "felt depressed", "felt lonely", "talked less than usual", and "felt people were unfriendly" on a scale ranging from 1 (never) to 5 (almost always). Alpha ranged from .68 to .73 across five waves. Additional analysis of other data (Galambos & Almeida, 1994; Galambos, Magill-Evans, & Darrah, 2007) showed correlations in the .80s between the 4- and 20-item version of the CES-D in samples of adolescents, young adults, and middle-aged adults. The mean for women ranged from a high of 2.88 ($SD = .67$) at age 18 to a low of 2.47 ($SD = .68$) at age 25. The mean for men ranged from a high of 2.63 ($SD = .63$) at age 18 to a low of 2.45 (SD = .63) at age 25. All *M*s and *SD*s are reported in Galambos et al. (2006).

To measure expressed anger, four items (Petersen & Kellam, 1977) asked "how often in the past few months" participants "felt angry", "lost your temper", "yelled at people", and "got into fights or arguments" on a scale ranging from 1 (never) to 5 (almost always). Alphas ranged from .82 to .84 across five waves. The mean for women ranged from a high of 2.72 ($SD = .81$) at age 18 to a low of 2.32 ($SD = .70$) at age 25. The mean for men ranged from a high of 2.53 ($SD = .79$) at age 18 to a low of 2.19 ($SD = .70$) at age 25. All *M*s and *SD*s are reported in Galambos et al. (2006).

Life transitions.

Drawing from data collected at age 32 ($n = 483$), five variables represented life transitions. In two dummy variables, participants were coded as married = 1 ($n = 324$; 171 women) if they were married or living common-law, and divorced = 1 ($n = 25$; 14 women) if they were separated or divorced. Single participants ($n = 134$; 61 women) were coded as 0 in both variables, serving as the reference group. Twenty-eight percent of the sample ($n = 134$) was never married. Participants were coded as parents = 1 ($n = 233$) if they responded affirmatively when asked "Are you raising any children (either your own or your spouse/partner's) who are presently living in your household?" Participants who reported having completed bachelor's, master's, or doctoral degrees were coded as having one or more university degrees = 1 ($n = 158$). The number of different times unemployed since leaving high school in 1985 averaged 1.36 ($SD = 2.36$; range = 0–23), with 42% of 32-year-olds reporting having never been unemployed.

Life and career satisfaction.

Five items assessed life satisfaction, and three items assessed career satisfaction, both at age 32. Three life satisfaction items were rated on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*): "On the whole, I am satisfied with myself" (Rosenberg, 1989); "I have succeeded in reaching the goals that I set for myself at this stage in life"; and "My personal relationships have worked out the way that I hoped they would." The other two life satisfaction items were: "Thinking about your life in general, how happy are you with your life?" rated on a three-point scale, scored as 1 (not very happy at all), 3 (somewhat happy), and 5 (very happy); and "In the past few months, how healthy have you felt mentally?" rated on a five-point scale from 1 (very unhealthy) to 5 (very healthy). With the exception of the Rosenberg item, all items were designed for this study at a time when life satisfaction measures were not as well established as now. A life satisfaction mean was calculated (for women $M = 4.00$, $SD = .75$; for men $M = 3.95$, $SD = .72$).

Three items designed to measure career satisfaction were "How satisfied are you with your career at this point?" rated on a scale from 1 (very dissatisfied) to 5 (very satisfied), "This is the kind of job I expected to have at this stage in my life", and "My career has worked out the way that I hoped it would", both rated on a scale from 1 (strongly disagree) to 5 (strongly agree). The career satisfaction mean was calculated (for women $M = 3.32$, $SD = 1.07$; for men $M = 3.23$, $SD = 1.03$). Of the 482 participants sampled at age 32, 13% were unemployed ($n = 18$) or out of the labour force ($n = 46$). Career satisfaction scores for these participants were based on their responses to the first item only, as the other two items were not asked of participants not currently employed.

Item Response Theory (IRT) models were estimated to evaluate the quality of the items comprising the life and career satisfaction scales. Discrimination and location parameters for each item were generated using the IRT software program MULTILOG (Thissen, Chen, & Bock, 2002). The obtained values of these parameters show that the items are effective at distinguishing between participants who choose different response options on the rating scale (discrimination), and that items are effective at distinguishing between participants at many levels of the latent constructs underlying the life and career satisfaction scales (location). Together, these parameters provide strong evidence that the items used to create the life and career satisfaction scales are reasonably reliable and valid.

Results

Table 1 presents correlations of depressive symptoms and expressed anger at each wave with life and career satisfaction at age 32. Lower levels of depressive symptoms were consistently associated with higher life satisfaction in women and men. There were smaller and less consistently significant negative correlations between depressive symptoms and career satisfaction in both sexes. At all waves, there were significant negative correlations between

Table 1. Correlations of depressive symptoms and expressed anger at five ages with life and career satisfaction at age 32 for women, men, and the total sample

Mental health indicator	Life satisfaction			Career satisfaction		
	Women	Men	Total	Women	Men	Total
Depressive symptoms						
Age 18	−.22*	−.26*	−.22*	−.14*	−.13*	−.12*
Age 19	−.32*	−.30*	−.31*	−.19*	−.14	−.16*
Age 20	−.38*	−.35*	−.36*	−.26*	−.18*	−.22*
Age 22	−.43*	−.30*	−.38*	−.22*	−.15	−.18*
Age 25	−.56*	−.36*	−.48*	−.24*	−.18	−.21*
Expressed anger						
Age 18	−.15*	−.01	−.08	−.01	−.06	−.03
Age 19	−.24*	−.12	−.19*	−.08	−.14	−.09
Age 20	−.26*	−.21*	−.23*	−.09	−.16*	−.10
Age 22	−.32*	−.09	−.22*	−.24*	−.06	−.15*
Age 25	−.35*	−.22*	−.30*	−.15*	−.15	−.15*

Note. *$p < .05$.

expressed anger and life satisfaction in women, but only two such correlations for men. Seven of ten correlations between expressed anger and career satisfaction were not significant; women's higher expressed anger at the last two waves was associated with lower career satisfaction.

A two-group (women and men), bivariate (depressive symptoms-expressed anger) latent growth curve model (see Figure 1) was constructed using M*plus* software (Muthén & Muthén, 2007). Direct maximum likelihood was used to compute parameter estimates based on available data for each case in the set. Latent growth curve models represent data collected over time as indicators of two latent factors: Participants' average initial status on each of depressive symptoms and expressed anger – *the intercept* – was defined by fixing the loadings of the repeated measures to 1.0. Participants' linear rate of change in each of depressive symptoms and expressed anger – *the slope* – was defined by fixing the loadings of the repeated measures in accordance with the time intervals between measures. For the model tested here, loadings were 0 (1985), 1 (1986), 2 (1987), 4 (1989) and 7 (1992). Gender-specific intercept and slope factors for each of depressive symptoms and expressed anger were regressed on family and school control variables and were modeled as predictors of life and career satisfaction at age 32. Life transitions experienced by age 32 were also modeled as predictors of life and career satisfaction.

Making use of a multivariate framework allowed us to covary repeated measures of depressive symptoms with expressed anger. Covariances of concurrent measures of depressive symptoms and expressed anger (e.g., age 18 with age 18) were freely estimated. Directional relations between depressive symptoms and expressed anger were modeled by regressing the slope factors of each measure on the intercept factors of their counterparts (not shown in Figure 1). In this way, we were able to determine whether initial status in depressive symptoms predicted growth in expressed anger, and vice versa. Model fit statistics indicated that this model fit the data well (CFI = .95, RMSEA = .03, SRMR = .06, $\chi2$ (284) = 407.11, $p < .001$). The final, unconstrained model was compared to a constrained model in which all parameters were constrained to be equal across men and women, with residuals permitted to vary freely. Model fit statistics for the constrained model provided mixed evidence for the adequacy of the model-data fit (CFI = .91, RMSEA = .04, SRMR = .07, χ^2 (337) = 539.86, $p< .001$), and a chi-square difference test showed the unconstrained model to provide significantly better fit to the data than the constrained model (χ^2 δ (53) = 132.75, $p< .001$). Therefore, the unconstrained model was retained.

Growth model results

The test for slopes showed significant declines in depressive symptoms from age 18 to 25 for women (B = −0.22; β = −3.27) and men (B = −.19; β = −2.88) and in expressed anger among women (B = −0.23; β = −5.57) and men (B = −.12; β = −5.46), as found in previous analyses that collapsed across gender (all *p*s < .05; Galambos et al., 2006). Gender-specific effects of family and school predictors on the latent intercept and slope factors for depressive symptoms and expressed anger replicated many results that were previously found for women and men combined (Galambos et al., 2006): Greater conflict with parents was associated with higher initial levels and faster declines in depressive symptoms and expressed anger among women and men, and higher school commitment was related to lower initial levels of depressive symptoms and expressed anger among women and men. Three new relations emerged only for women: Higher grades and being on an academic track were associated with lower initial depressive symptoms, and being on an academic track was also associated with lower initial levels of expressed anger. One new relation emerged for men: Having more educated parents predicted faster declines in expressed anger. Although Galambos et al. found that having more educated parents predicted faster declines in depressive symptoms, this relation did not emerge when examined separately in men and women.

Young adult outcomes

Life and career satisfaction at age 32 were significantly and positively interrelated (see Figure 2). Higher levels of depressive symptoms at age 18 were associated with lower life satisfaction at age 32 in both sexes, and with lower career satisfaction in women. Slower declines in women's, but not men's, depressive symptoms predicted lower life satisfaction at age 32, but this trajectory was unrelated to career satisfaction for women or men. Initial levels of expressed anger were not related to life or career satisfaction for

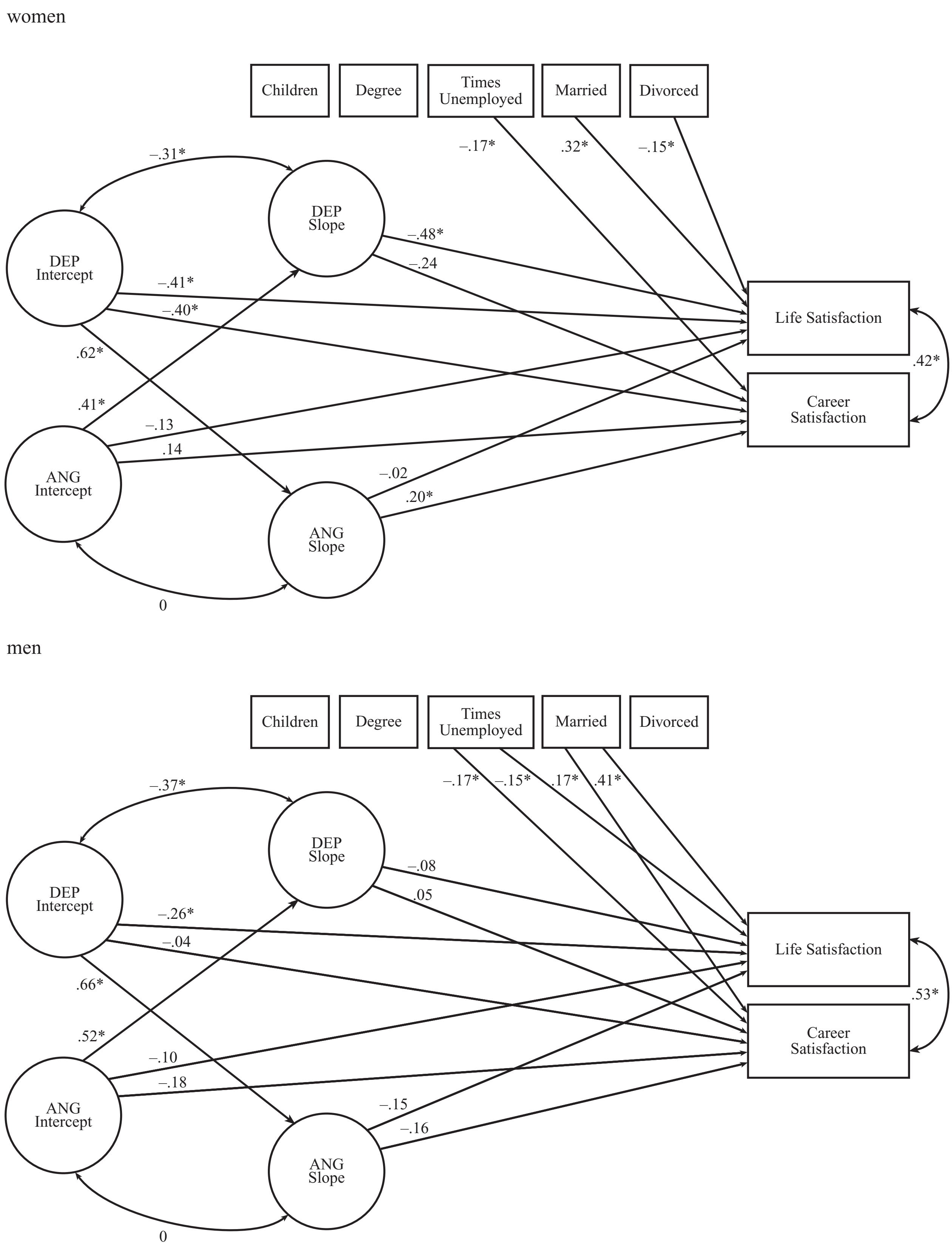

Figure 2. Results (standardized coefficients) of the two-group (women-men) bivariate growth model. To aid readability and highlight key substantive results, effects of control variables on latent growth factors are reported in the text rather than shown here, and non-significant paths between life transitions and life and career satisfaction are not presented.

Table 2. Covariances between depressive symptoms and expressed anger over time

	Expressed anger				
Depressive symptoms	Age 18	Age 19	Age 20	Age 22	Age 25
Women	.35*	.44*	.38*	.26*	.47*
Men	.25*	.36*	.33*	.27*	.11

Note. Entries are standardized coefficients (β); *$p < .05$; CFI = .95, RMSEA = .03, SRMR = .06, χ^2 (284) = 407.11, $p < .001$. *$p < .05$.

women or men, but slower declines in women's expressed anger over time were associated with higher career satisfaction at age 32. Expressed anger trajectories were not related to life satisfaction in either sex or to career satisfaction in men.

Life transitions

Figure 2 shows that women and men who were married at age 32 reported higher life satisfaction, and married men also reported higher career satisfaction. Divorced and separated women, but not men, reported lower life satisfaction. Women and men reported lower career satisfaction at age 32 if they had experienced more times of unemployment since leaving high school, and men also reported lower life satisfaction with more times of unemployment. Being a parent and having a university degree were not associated with life or career satisfaction.

Relations between depressive symptoms and expressed anger

Depressive symptoms and expressed anger covaried over time, as shown in Table 2. During years in which depressive symptoms were higher, expressed anger was also higher, and this trend remained constant across emerging adulthood, with the exception of a decoupling at age 25 among men. Relations between initial depressive symptoms and growth in expressed anger and between initial expressed anger and growth in depressive symptoms were also modeled, as shown in Figure 2. For men and women, higher depressive symptoms and expressed anger at age 18 predicted slower declines through age 25 in expressed anger and depressive symptoms, respectively.

Discussion

The challenges and opportunities faced in emerging adulthood and beyond result in a diversity of developmental pathways. This study found gender-related diversity in (a) pathways from emerging adult mental health to young adult life and career satisfaction; (b) associations of key life transitions with life and career satisfaction; and (c) the coupling of depressive symptoms and expressed anger through emerging adulthood.

The first key finding was that pathways from emerging adult mental health to young adult life and career satisfaction diverged for men and women. Changes in depressive symptoms and expressed anger from age 18 through 25 carried over into lower life and higher career satisfaction, respectively, for women at the age of 32, but these trajectories did not seem to matter for the life and career satisfaction of men. Regarding depressive symptoms, women who were less depressed to begin with and whose depressive symptoms declined more sharply through emerging adulthood felt happier and more satisfied with themselves, their personal relationships, and life in general at age 32. It is not surprising that patterns of change in women's depressive symptoms provide a bridge to women's life satisfaction in young adulthood. Rates of depression are higher among women in their twenties compared to men (Statistics Canada, 2002), and there is evidence for continuity of internalizing symptoms from adolescence through young adulthood (Burt et al., 2008). It is interesting that men's depressive symptoms at age 18, but not trajectories across emerging adulthood, were linked with life satisfaction. Perhaps this is a function of men's relatively lower levels of depressive symptoms to start with, which declined even further on average by age 25. To the extent that lower life satisfaction is indicative of poorer mental health, elevated depressive symptoms in men at age 18 – a possible peak – could be a warning for future mental health difficulties (cf. Hankin et al., 1998).

Regarding expressed anger, women whose anger subsided less through emerging adulthood reported higher career satisfaction at age 32, an unexpected and intriguing finding. Perhaps a certain level of anger is beneficial for climbing the ladder to career success among women particularly if it comes across as more assertive than aggressive. After all, women tend to express anger in non-explosive ways (Campbell & Muncer, 2008). Our measure of expressed anger cannot tell us about specific behaviors in the workplace or elsewhere but we speculate that women's expressions of anger may allow them to address frustrations in the workplace, to compete in environments in which self-assertion is important, and to obtain results from others, all of which could lead to a more satisfying perspective on career success. Another possible explanation for this intriguing relation is that women for whom career success is important may encounter situations along the way (e.g., difficulty balancing work and family) that make them angrier as they pursue their goal.

The second key finding was that the potential influences of life transitions, specifically marriage and unemployment, on young adult life and career satisfaction seemed to be more wide-ranging for men and domain-specific for women. Married women reported higher life satisfaction, and divorced or separated women reported lower life satisfaction at age 32. Women who experienced more times of unemployment reported lower career satisfaction at age 32. For men, however, being married was related to higher life and career satisfaction, and experiencing more times of unemployment was related to lower life and career satisfaction. Given the absence of effects related to men's mental health trajectories, it could be that their self-perceived success as young adults relies heavily on marriage and work together, overshadowing depression and anger. These results, along with the strong correlation between life and career satisfaction for men (Figure 2), suggest that their life and career satisfaction are more strongly interconnected. Women's self-perceived success, on the other hand, may depend on the joint contributions of mental health trajectories and life transitions, and they may be more likely to consider work as a sphere that is somewhat separate from the rest of their lives. The absence of any effect of completing university on men and women suggests that marriage and work surpass this transition in importance by young adulthood. It was interesting that parenthood was unrelated to life and career satisfaction but perhaps not surprising given that children bring both personal costs and benefits (see e.g., Galambos & Krahn, 2008).

The third key finding was that the coupling over time of depressive symptoms and expressed anger differed for men and women. Covariations between women's depressive symptoms and expressed anger were larger and maintained significance through emerging adulthood, whereas by age 25, men's depressive symptoms and expressed anger were no longer related. This may be due to men's depressive symptoms generally being fairly low; perhaps by age 22 men's average depressive symptoms had declined to such an extent that any additional decline by age 25 was trivial, thus not keeping pace with continued and substantial decline in average expressed anger. Women's depressive symptoms and expressed anger are strongly connected, rising and falling together throughout emerging adulthood. Furthermore, men and women who experienced higher levels of depressive symptoms at age 18 had poorer trajectories of expressed anger over the next seven years, and higher levels of expressed anger at age 18 predicted poorer trajectories of depressive symptoms. As the coupling over time between depressive symptoms and expressed anger has been studied rarely, if at all, these results offer some insight into questions about whether depression and anger co-occur similarly in men and women and whether one might drive growth in the other (e.g., Newman, Fuqua, Gray, & Simpson, 2006; Suls & Bunde, 2005).

Limitations of this study include attrition from ages 18 to 25. At age 32, however, a substantial proportion of the original sample was recovered. Use of a short version of the CES-D is another limitation, although we have good evidence for its validity. Previously validated scales for life and career satisfaction were not used since they did not exist when the data were collected, but IRT analyses suggested that the measures used in this study are reasonable. The homogeneous nature of this sample might also limit the generalizability of the results beyond urban youth in western Canada. Given that the data were collected between 1985 and 1999, the extent to which the results apply to more recent cohorts is unknown.

This study also has several strengths. First, multiple waves of assessment spanned a 14-year period in a community sample of graduating high school seniors, allowing us to track mental health indicators across emerging adulthood and to predict life and career satisfaction in young adulthood. From our results it is clear that research spanning such a length of time is highly informative for understanding development during a very important and transitional portion of the life course. Second, we used advanced structural modeling techniques to test an integrated two-group bivariate latent growth model. Growth modeling with latent variables has only recently become popular for the analysis of longitudinal data (Bollen & Curran, 2006), and in this study we took advantage of these techniques to model developmental pathways. We integrated two univariate seven-year growth models (Galambos et al., 2006), and then regressed two 14-year outcome variables on the growth factors of those trajectories, controlling for age 18 variables and life transitions by age 32. To our knowledge, this model represents a novel method for examining developmental pathways from emerging to young adulthood.

It is clear that there is a diversity of mental health paths through emerging adulthood, that diversity in these paths foreshadows important outcomes in young adulthood, and that there are between-persons sources of diversity (specifically, gender in our study) that appear to play a significant role in how young people navigate through and beyond their emerging adult years. Interindividual differences in intraindividual change in the domains within which emerging adulthood is experienced positively and negatively collectively set the stage for functioning in young adulthood. Additional research following from the present study will help to elucidate the ways in which other emotional, social, and behavioral trajectories work together to produce diversity in pathways from emerging to young adulthood and beyond.

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