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Codevelopment of Well-Being and Developmental Progress in Central Life Domains During Established Adulthood

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Abstract

Adaptive development through adulthood entails developmental progress within multiple domains of life, such as health, work, and family. Adult status within these life domains is often solidified during established adulthood (30–45 years of age). Developmental progress within these central life domains is reflected in high perceived control and satisfaction, which should coincide with improved well-being. To test this proposition, we examined how developmental progress in central life domains codevelops with well-being during established adulthood. Multilevel growth model analyses were conducted using data from the Midlife in the United States study (MIDUS I, II, and III) for participants who completed at least two study assessments when they were between the ages of 30 and 45 ($n = 614$). The results indicated that established adults reported high levels of domain progress in their work, romantic partner and child relationships, and health, as well as moderate levels of prosocial and financial domain progress. While overall levels of well-being declined during established adulthood, higher levels of and positive changes in domain progress were linked with improved well-being during established adulthood. With few exceptions, demographic characteristics (age, sex, education, and income) did not moderate these linkages. Cumulatively, the results suggest that established adulthood is a developmental stage during which individuals progress in central developmental domains of adulthood, with the extent of this progress coinciding with improved well-being.

Keywords Adulthood · Established adulthood · Developmental goals · Life domains · Well-being

Established adulthood (ages 30–45) is a period in the lifespan characterized by progress within central developmental domains of adulthood. Yet it is often accompanied by increased stress from coordinating and striving to achieve developmental goals within these domains (Mehta et al., 2020). The confluence of developmental progress and mental and emotional demands within established adulthood are associated with conflicting well-being trajectories with some research reporting increased well-being (e.g., Ryff, 1995) and other research reporting decreased well-being (e.g., Steptoe et al., 2015). A more nuanced understanding of these disparate findings may be gained with a developmental and motivational framework. Societal norms and expectations of what individuals should accomplish at different points in their lifespan frame the life domains within which individuals strive for progress (Havighurst, 1948; Heckhausen, 1999; Neugarten et al., 1965), and successful developmental progress is linked with increased well-being (Brunstein et al., 1999; Deci & Ryan, 2000; Klug & Maier, 2015; Markus & Kitayama, 1994; Oishi & Diener, 2009; Oishi et al., 1999; Sheldon & Elliot, 1999). Thus, individuals' well-being may mirror the developmental progress that they make within life domains pertinent to established adulthood. However, no research has empirically examined this proposition longitudinally across multiple life domains, much less focused on how well-being and developmental progress are linked during established adulthood. Our study sought to contribute to a better understanding of development during established adulthood using longitudinal data on well-being and developmental progress from the national Midlife in the United States study (MIDUS). We examined levels and changes in well-being and developmental progress in central life domains during established adulthood and assessed how

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developmental progress and well-being codevelop over time during established adulthood.

Developmental Progress in Central Life Domains of Adulthood

The motivational theory of lifespan development posits that adaptive development across the lifespan entails maximizing the potential to control oneself and one's environment (Heckhausen et al., 2010). Earlier phases of the lifespan, including established adulthood, are gain oriented (Baltes, 1997), with individuals striving for developmental progress within life domains pertinent to their age. This is achieved through optimization strategies that determine what and when goals should be selected, pursued, and let go, as well as the coordination of motivational strategies that facilitate goal engagement and disengagement (Heckhausen et al., 2010, 2019). One such optimization strategy suggests that goal pursuit becomes adaptive if it capitalizes on opportunities to increase long-term control over oneself and the surrounding environment. Opportunities are framed by societal pressures, which push forward socially sanctioned life domains for people to pursue goals within at certain ages (i.e., developmental goals) (Heckhausen, 1999; Heckhausen & Buchmann, 2019). Individuals can expect more opportunities and fewer costs for pursuing developmental goals that lead toward developmental progress within life domains matching their socially scaffolded opportunities (e.g., family formation during established adulthood) compared to developmental pursuits that run counter to societal norms and expectations (e.g., retirement during established adulthood).

Developmental Progress and Well-Being During Established Adulthood

During established adulthood, individuals are managing increased demands on their time and energy that may contribute to declining levels of certain aspects of well-being. Indeed, established adulthood is characterized by the nadir of hedonic well-being in high-income English-speaking countries, evidenced by peak levels of stress, worry, anger, unhappiness, and low levels of subjective well-being (Steptoe et al., 2015). The trajectories of eudaimonic aspects of well-being are more complex, evidenced by increases in autonomy, positive relations with others and environmental mastery, as well as decreased purpose in life and personal growth during established adulthood (Ryff, 1995). Insight into these conflicting findings may be explained by using a developmental and motivational perspective that acknowledges the short-term focus of hedonic well-being and the long-term focus of eudaimonic well-being.

Hedonic well-being evinces largely transitory fluctuations in response to markers of developmental progress, such as major life events (e.g., marriage, parenthood, career promotions, unemployment) (cf., Clark & Georgellis, 2013; Clark et al., 2008; Luhmann et al., 2012; O'Leary et al., 2020). Eudaimonic well-being, however, is more focused on the foundational and stable aspects of being well rather than the subjective effects of feeling well, such as happiness and life satisfaction which are best captured by hedonic well-being (Ryff, 1989, 1995, 2018). According to Ryff's model, these aspects include purpose in life, self-acceptance, personal growth, autonomy, positive relationships, and environmental mastery, which cumulatively constitute an individual's overall eudaimonic well-being. We focus on overall eudaimonic well-being and use Ryff's measure of eudaimonic well-being in this study because it may better reflect long-term changes in life circumstances that developmental progress within key life domains during established adulthood confers.

Converging theories support the notion that developmental progress, including but not limited to the pursuit and attainment of developmental goals, leads to increased well-being (Brunstein et al., 1999; Deci & Ryan, 2000; Heckhausen et al., 2010; Markus & Kitayama, 1994; Oishi & Diener, 2009; Oishi et al., 1999; Sheldon & Elliot, 1999). For example, Oishi and colleagues (1999; 2009) suggest that increases in well-being following goal attainment depend on the degree to which the goal pursuit is considered a worthy endeavor for individuals at their respective age and within their respective culture. Thus, by pursuing age- and socio-culturally appropriate goals, individuals benefit from increased opportunities to attain these goals (Heckhausen & Buchmann, 2019) and from the recognition that such developmental progress confers (Markus & Kitayama, 1994; Oishi & Diener, 2009; Oishi et al., 1999), culminating in enhanced well-being (Messersmith & Schulenberg, 2010; Schulenberg et al., 2004). These benefits may be pronounced when the goals are personally meaningful (Brunstein et al., 1999; Deci & Ryan, 2000, 2008; Sheldon & Elliot, 1999), with meaningfulness reinforced by the shared values that form around developmental goal pursuits (Havighurst, 1948; Markus & Kitayama, 1994; Neugarten et al., 1965).

Developmental progress during established adulthood overlaps with, yet is distinct from, its preceding stage of emerging adulthood and its following stage of middle adulthood. During emerging adulthood, developmental progress is marked by goals related to completing education and beginning a career (Yau et al., 2021). However, the importance of romantic relationships and starting a family rise during established adulthood (Buchinger et al., 2021), replacing completing education as core developmental pursuits during the transition into established adulthood (Dietrich et al., 2013; Salmela-Aro et al., 2007). This coincides with social network shifts toward prioritizing close social relationships

during established adulthood, such as those with one's family, romantic partner, and children (Antonucci et al., 2004; Wrzus et al., 2013). Established adulthood is also a time when individuals may experience greater conflict with their children due to declines in their control and authority while their child strives for autonomy (Branje, 2018). Based on this previous research, we can expect increasing developmental progress in romantic relationships during established adulthood but decreasing developmental progress in relationships with children during established adulthood. Nonetheless, individuals who follow the developmental progression toward closer social relationships during established adulthood report greater well-being in midlife (Carmichael et al., 2015), suggesting that those who experience developmental progress in their relationships with their romantic partner and with their children should experience similar changes in their well-being during established adulthood.

While career progress remains important during established adulthood, the focus shifts toward competence development, establishment, and advancement within a career, and away from career selection which characterized adolescence and emerging adulthood (Heckhausen et al., 2017; Shane & Heckhausen, 2019; Super, 1980). Individuals who realize these markers of developmental progress are more likely to become embedded within their careers (Ng & Feldman, 2007; Stumpf, 2014). Embeddedness can lead to becoming stuck in one's career ("entrenchment") and worse well-being (Ng & Feldman, 2014). However, work-related skill and competence development during established adulthood improves individuals' employability and adaptability; developmental progress that counters the negative aspects of career entrenchment (Zacher et al., 2015) and enhances well-being (Maggiori et al., 2013). Established adulthood is characterized by an increasingly stable and committed work situation wherein one has developed expertise (Mehta et al., 2020). Yet the age this career establishment happens varies across career fields (Heckhausen et al., 2017; Shane & Heckhausen, 2019). For individuals in early-peak careers, such as those in the service industry, career establishment may have happened during emerging adulthood, with little if any developmental progress occurring during established adulthood. In contrast, establishment in late-peak careers (e.g., doctor, lawyer, professor) may not happen until midlife, with considerable developmental progress during established adulthood. Despite this variability in career-related developmental progress across career fields, we can expect individuals who do experience career-related developmental progress to also experience improved well-being.

Wages and income rise during established adulthood (Bureau of Labor Statistics, 2022; U.S. Census Bureau, 2021), and attaining financial independence is a key marker of adulthood (Lee & Mortimer, 2009), suggesting that established adulthood may be characterized by finance-related developmental progress. This is reinforced by research showing that financial goals typically increase over the course of emerging adulthood (Ranta et al., 2014; Yau et al., 2021), and owning a home becomes a more common goal pursuit during established adulthood (Buchinger et al., 2021). However, economic (Atherton et al., 2021) and status goals (Bühler et al., 2019) decline during established adulthood. The valuing of wealth is negatively related to well-being (Dittmar et al., 2014), and income is positively associated with well-being (Diener & Biswas-Diener, 2002; Stevenson & Wolfers, 2013) especially for those who had few economic resources (Jebb et al., 2018) or are just establishing financial independence. This suggests that the finance-related developmental progress many individuals experience during established adulthood will be tied with positive changes in their well-being.

Established adulthood may also be a time in the lifespan where individuals direct their attention toward and experience developmental progress within the prosocial domain. Indeed, prior research has shown that prosocial motivation peaks at 45 years of age (Shane et al., 2021b). Prosocial-oriented goals increase during established adulthood (Bühler et al., 2019), which are defined as goals that prioritize the benefit of others rather than the self, reflected in behaviors such as helping, donating to, caring for, and comforting others (Batson, 1998; Penner et al., 2005). However, Shane and colleagues (2021b) also found that established adults with children reported lower levels of prosociality than those without children, attesting to the "career-and-care-crunch" of established adulthood wherein individuals are deeply absorbed in the simultaneous fulfillment of both career and care-taking responsibilities (Mehta et al., 2020). Caretaking can be emotionally and physically taxing, which can lead to poorer mental health and well-being (Hirst, 2005; Rosato et al., 2019). While the relationship between prosociality and well-being is complicated by the demands of caretaking, prosociality is generally linked with improved well-being, with the link being stronger for eudaimonic well-being than for hedonic well-being and for younger versus older adults (Hui et al., 2020). Based on these findings, we can expect to see developmental progress within the prosocial domain during established adulthood, with this progress positively linked with changes in well-being.

During established adulthood, individuals increasingly focus on their own health (Salmela-Aro et al., 2007; Shane & Heckhausen, 2016), perhaps in response to age-graded declines in self-rated health (Cullati et al., 2014). Health trajectories in established adulthood are complex and variable (Aldwin et al., 2001), with some individuals being in their best lifespan health during this age period and others experiencing dramatic declines. Nonetheless, we can expect to see general declines in developmental progress within the health domain during established adulthood. Despite these overall

declines in health, given the links between physical health and well-being (Cloninger et al., 2012; Shane et al., 2021a), we can expect individuals' well-being to be positively coupled with their health-related developmental progress.

In sum, developmental progress within the family, work, financial, prosocial, and health domains is important during established adulthood. While the ascribed value of each domain may differ between individuals, developmental progress in multiple domains of life is a hallmark of successful aging (Heckhausen et al., 2010, 2019; Shane & Heckhausen, 2016). Developmental progress through successful goal pursuit is associated with enhanced well-being (Klug & Maier, 2015); an association that is amplified when developmental progress aligns with societal expectations of what should be pursued at different stages in the lifespan (Markus & Kitayama, 1994; Oishi & Diener, 2009; Oishi et al., 1999).

Present Study

Theory suggests that developmental progress in central life domains should correspond with enhanced well-being (Brunstein et al., 1999; Deci & Ryan, 2000; Heckhausen et al., 2010; Markus & Kitayama, 1994; Oishi & Diener, 2009; Oishi et al., 1999; Sheldon & Elliot, 1999). However, few studies have empirically examined this proposition longitudinally or across multiple life domains. Moreover, to our knowledge, none have examined how developmental progress corresponds with well-being as individuals seek to solidify their lives during established adulthood. Established adulthood is characterized by increasing stressors and demands (Mehta et al., 2020) which can undermine well-being (Steptoe et al., 2015). Developmental progress within key life domains may help reverse these trends, leading instead to the improvements in well-being during established adulthood found in previous cross-sectional research (Ryff, 1995). In the present study, we contribute to the field of established adulthood by examining developmental progress over time and across life domains pertinent to established adulthood, and the significance of this developmental progress for one's well-being.

Research Question 1: How does eudaimonic well-being and developmental progress in work, health, social relationships, finances, and prosociality domains change during established adulthood (ages 30 to 45)? Based on previous research, we expected that eudaimonic well-being would decline during established adulthood (Hypotheses 1). We further expected to observe increasing developmental progress, as measured by domain-specific perceived control and satisfaction, in work (Hypothesis 2a), finances (Hypothesis 2b), prosociality (Hypothesis 2c), and relationships with romantic partner (Hypothesis 2d), but decreasing developmental progress in health (Hypothesis 2e) and relationship with child(ren) (Hypothesis 2f).

Research Question 2: How do changes in developmental progress in central life domains predict corresponding changes in eudaimonic well-being during established adulthood? We expected that developmental progress in each life domain examined would codevelop with changes in eudaimonic well-being, such that increases in developmental progress would positively predict increases in well-being (Hypothesis 3).

While we hypothesized that developmental progress in each life domain would predict enhanced eudaimonic well-being, unequal opportunities to pursue and attain developmental goals may moderate these relationships. For example, goal striving within life domains that one has little control over is associated with poorer mental and physical health (Shane & Heckhausen, 2012) and goal-striving stress that can impair well-being (Neighbors et al., 2011; Sellers & Neighbors, 2008). While not the focus of the present study, it is important to understand the degree to which observed developmental processes differ across demographic groups to further our understanding of development during established adulthood (Mehta et al., 2020). Accordingly, we conducted exploratory analyses to examine whether demographic differences that may produce unequal opportunities for developmental goal pursuit and attainment (sex, education, income, and age) moderated the relationship between developmental progress and eudaimonic well-being. We did not expect that positive associations between changes in developmental progress in life domains and changes in well-being during established adulthood would be moderated by sex, education level, income, and age.

Method

Participants and Procedure

We used data from the Midlife in the United States study (MIDUS I, II, III) to examine our research questions. Full study details are reported elsewhere (Ryff et al., 2017), and the data are available through the ICPSR (https://www.icpsr.umich.edu/icpsrweb/ICPSR/series/203). Data collection was approved by the University of Wisconsin-Madison IRB, and secondary data analysis was approved by the lead author's institution IRB (Brooklyn College). Study assessments were completed during approximately 9-year intervals. Participants were retained in the analyzed sample if they completed two study assessments when they were in established adulthood (between the ages of 30–45) ($n = 614$). At baseline, the sample was early in established adulthood (average age = 33), middle class (72% had completed some post-secondary education, average household income = $75,379), majority Female (59%), and predominately White (93%).

Measures

Developmental Progress

Developmental progress at each wave (MIDUS I to III) was assessed for participants' health, work, finances, prosociality, relationship(s) with romantic partner(s), and relationship(s) with child(ren). We did not measure progress toward specific goals. Instead, we operationalized developmental progress within a life domain as the extent to which a participant perceived control over that domain and felt satisfied within that domain. For each life domain, participants reported their satisfaction (e.g., "Using a scale from 0 to 10 where 0 means 'the worst possible X' and 10 means the 'the best possible X,' how would you rate your X these days?") and perceived control (e.g., "Using a scale from 0 to 10 where 0 means 'no control at all' and 10 means 'very much control,' how would you rate the amount of control you have over your X these days?"). Participants only responded to questions that were personally relevant. Responses to the satisfaction and perceived control questions were averaged within each domain to produce a composite developmental progress score for that domain at each time point: health *r*s = .51–.55, work *r*s = .62–.66, romantic partner relationship *r*s = .67–.69, children relationship *r*s = .59–.66, prosociality *r*s = .39–.51, and financial *r*s = .53–.60.

Well-Being

Eudaimonic well-being at each wave (MIDUS I to III) was assessed using the psychological well-being scale (Ryff, 1989). The scale contains 18 items, with 3 items corresponding to each of the six dimensions of well-being from the psychological well-being model. Ryff's psychological well-being model and measure was the result of a theoretical synthesis of previous research and theory on well-being (Ryff, 1989, 1995) and is one of the most widely used models and measures in the study of well-being (Ryff, 2014, 2018). Participants responded to each item using a 7-point scale, with 1 = *strongly agree* to 7 = *strongly disagree*. Some items were positively worded so that agreement indicated greater well-being (e.g., "For me, life has been a continuous process of learning, changing, and growth"), whereas others were negatively worded so that disagreement indicated greater well-being (e.g., "I tend to be influenced by people with strong opinions"). Responses to positively worded items were reverse coded and averaged with responses to negatively worded items so that higher scores indicated greater well-being. As the focus of the present study was on codevelopment of developmental progress within life domains with overall well-being, we used the average of the six dimensions to capture overall eudaimonic well-being in our analyses (αs = .75–.82) consistent with previous research (Hamm et al., 2019).

Rationale for Analyses

Multilevel growth model analyses were conducted in a stepwise fashion. To examine Research Question 1 and related hypotheses about how well-being and developmental progress in life domains develops during established adulthood, separate, descriptive growth models were used to identify average within-person trajectories of change in developmental progress for each life domain and eudaimonic well-being in established adulthood (Step 1). To examine Research Question 2 and the related hypothesis about how well-being and developmental progress in life domains codevelop during established adulthood, separate growth models were first constructed to examine codevelopment in established adulthood by predicting changes in well-being from changes in developmental progress in each domain separately (Step 2). Then a joint growth model was constructed that predicted changes in well-being from changes in developmental progress in all domains simultaneously to test unique associations (Step 3). A final step involved growth models that tested whether key demographic variables, including age, sex, education, and income, moderated the associations between changes in developmental progress and corresponding changes in well-being (Step 4).[1]

Predictive models in Steps 2–4 controlled for baseline differences in age, sex, education, and income. All models were

[1] We used a baseline-centering approach in our multilevel analyses (i.e., subtracting each person's score at wave 2 and wave 3 from their corresponding score at wave 1) to examine how within-person changes in our predictors and outcomes codeveloped. This approach accounted for non-linear changes in our outcome and our Level-1 predictors of primary interest (developmental goal progress). For example, if an individual reported a 7 on prosocial developmental goal progress at wave 1, a 6 at wave 2, and a 9 at wave 3, they would have the following scores on the baseline-centered predictor: 0 (7–7), − 1 (6–7), + 2 (9–7). This means the person first decreases, then increases on goal progress (a non-linear pattern). We note that the Level-1 relationship between within-person changes in the predictor and within-person changes in the outcome is constrained to be linear. If the relationship is positive, it means that on occasions where one increased from baseline on the predictor one also increased from baseline on the outcome. However, this Level-1 relationship is not constrained to be linear over time because these models do not constrain people to linearly increase or decrease over time in the predictor or the outcome. In other words, because we control for the effect of linear changes over time (Level-1 time is a covariate), we are estimating how within-person changes from baseline in our Level-1 predictors are associated with corresponding changes in our outcome over and above any linear trends over time. Our baseline-centering approach, thus, enabled us to predict within-person deviations from an individual's linear trends. Baseline-centered models have been described as process-based approaches because they focus on coupled change (vs. time-based approaches that focus on correlated change; see Sliwinski & Mogle, 2008; Sliwinski & Buschke, 1999, 2004).

Table 1 Descriptive multilevel growth models examining changes in well-being and developmental progress during established adulthood (Step 1)

Predictor variables	Well-being	Child relationship	Romantic partner relationship	Health	Work	Financial	Prosocial
	b (SE)	*b* (SE)	*b* (SE)	*b* (SE)	*b* (SE)	*b* (SE)	*b* (SE)
Intercept	16.72 (.091)**	8.69 (.060)**	7.95 (.075)**	7.74 (.054)**	7.15 (.077)**	6.27 (.076)**	6.93 (.072)**
Level 1 (within-person)							
Increases in time	−0.19 (.048)**	−0.31 (.045)**	−0.09 (.054)	−0.08 (.035)*	−0.09 (.065)	0.13 (.055)*	0.01 (.054)
Level 2 (between-person)							

Time was baseline centered to examine changes over time in well-being and domain-specific developmental progress

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

estimated with Mplus 8 (Muthén & Muthén, 1998–2017), with missing data handled using full-information maximum likelihood estimation (FIML). For each domain, our analyses only included individuals who reported on their developmental progress (perceived control and satisfaction) in the specified domain. For example, only those who reported on their developmental progress in their relationships with children were included in the child relationships analysis. As expected, this resulted in the smallest sample sizes observed for the domains of relationships with children (419) and romantic partner (483), with larger sample sizes observed for the domains of health (608), work (604), finances (607), and prosociality (602).

Results

Research Question 1: Developmental Progress and Well-Being in Established Adulthood

Descriptive multilevel growth models were estimated to identify trajectories of eudaimonic well-being and developmental progress in each life domain (Step 1). We estimated two-level models with measurement occasions (Level-1) nested within participants (Level-2). Level-1 models included an intercept, baseline-centered score of time in study, and a residual term. Level-2 models included random effects for the intercept and time slope.

As shown in Table 1, intercepts in these models indicated that, at baseline, individuals in established adulthood reported relatively high levels of eudaimonic well-being (16.72; max score of 21) and successful developmental progress in their work, relationships with their children and romantic partner, and their health (range 7.15–8.69; max score of 10). Participants reported moderate developmental progress in their finances (6.27) and prosocial contributions (6.93) at baseline. Time slopes in these models showed that, on average, participants experienced declines over time in eudaemonic well-being ($b = -.19$, SE = .048, $p < .001$) (supporting Hypothesis 1a). Participants experienced increases in financial developmental progress during established adulthood ($b = .13$, SE = .055, $p = .016$) (supporting Hypothesis 2b). In contrast, participants experienced declining developmental progress in health ($b = -.08$, SE = .035, $p = .020$) (supporting Hypothesis 2e) and relationships with children ($b = -.31$, SE = .045, $p < .001$) (supporting Hypothesis 2f) over the course of established adulthood. Finally, there was relative stability in developmental progress in work ($b = -.09$, SE = .065, $p = .151$) (not supporting Hypothesis 2a), prosocial contributions ($b = .01$, SE = .054, $p = .914$) (not supporting Hypothesis 2c), and romantic partner relationships ($b = -.09$, SE = .054, $p = .117$) (not supporting Hypothesis 2d) during this period.

Research Question 2: Codevelopment of Developmental Progress and Well-Being

Separate Growth Models

Six multilevel growth models were estimated to test whether changes in developmental progress in each separate life domain predicted corresponding changes in well-being (Step 2). We estimated two-level models with measurement occasions (Level-1) nested within participants (Level-2). Level-1 models included an intercept, baseline-centered score of time in study, and a residual term. We baseline-centered time and the Level-1 developmental progress predictors in Steps 2, 3, and 4 (Sliwinski & Buschke, 1999). Baseline centering enabled a test of whether within-person changes since baseline in developmental progress in each domain predicted corresponding changes in well-being from baseline (Sliwinski & Buschke, 2004; Sliwinski & Mogle, 2008). The intercepts in these models represented baseline levels of well-being. Time slopes in these models represented the amount of change in well-being from baseline. Level-1 models were specified as follows:

Table 2 Separate multilevel growth models predicting change in eudaimonic well-being from changes in developmental progress during established adulthood (Step 2)

Predictor variables	Well-being					
	b (SE)	*b* (SE)	*b* (SE)	*b* (SE)	*b* (SE)	*b* (SE)
Intercept	16.80 (.103)**	16.89 (.091)**	16.38 (.142)**	16.73 (.083)**	16.71 (.085)**	16.33 (.141)**
Level 1 (within-person)						
Increases in time	− 0.08 (.061)	− 0.19 (.054)**	− 0.10 (.078)	− 0.18 (.048)**	− 0.23 (.047)**	− 0.21 (.080)*
Increases in child relationship developmental progress	0.25 (.057)**					
Increases in romantic partner relationship developmental progress		0.31 (.043)**				
Increases in health developmental progress			0.35 (.053)**			
Increases in work developmental progress				0.19 (.029)**		
Increases in financial developmental progress					0.28 (.033)**	
Increases in prosocial developmental progress						0.23 (.036)**
Level 2 (between-person)						
Baseline age	0.04 (.051)	0.00 (.044)	0.03 (.041)	0.03 (.040)	0.04 (.041)	0.03 (.041)
Baseline sex (female)	− 0.19 (.213)	− 0.07 (.187)	0.07 (.173)	− 0.01 (.169)	0.07 (.174)	− 0.19 (.174)
Baseline income	0.00 (.00)*	0.00 (.00)	0.00 (.00)**	0.00 (.00)*	0.00 (.00)	0.00 (.00)**
Baseline education	0.22 (.048)**	0.22 (.041)**	0.15 (.039)**	0.17 (.038)**	0.16 (.039)**	0.15 (.038)**
Baseline domain-specific developmental progress	0.32 (.083)**	0.42 (.052)**	0.48 (.062)**	0.42 (.043)**	0.33 (.047)**	0.42 (.046)**

Time and all other Level-1 predictors were baseline centered to examine whether within-person changes in developmental progress predicted within-person changes in well-being. Level-2 baseline predictors were grand-mean centered to facilitate interpretation. Level-2 parameters for baseline developmental progress reflect domain-specific developmental progress with child relationship, romantic partner relationship, health, work, financial, and prosocial contributions, respectively. All models controlled for cross-level interactions between the Level-2 predictors and Level-1 time variable (parameters not shown for clarity)

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

$$Y_{ti} = b_{0i} + b_{1i}\left(\text{Time}_{ti} - \text{Time}_{1i}\right) + b_{2i}\left(\text{Developmental Progress}_{ti} - \text{Developmental Progress}_{1i}\right) + r_{ti}$$

Level-2 covariates included baseline age, sex, income, education, and developmental progress. All Level-2 predictors were grand-mean centered. Level-2 models were specified as follows:

$$b_{0i} = \beta_{00} + \beta_{01}\left(\text{Age}_{1i}\right) + \beta_{02}\left(\text{Sex}_{1i}\right) + \beta_{03}\left(\text{Edu}_{1i}\right) + \beta_{04}\left(\text{Income}_{1i}\right) + \beta_{05}\left(\text{Developmental Progress}_{1i}\right) + u_{0i}$$

$$b_{1i} = \beta_{01} + \beta_{11}\left(\text{Age}_{1i}\right) + \beta_{12}\left(\text{Sex}_{1i}\right) + \beta_{13}\left(\text{Edu}_{1i}\right) + \beta_{14}\left(\text{Income}_{1i}\right) + \beta_{15}\left(\text{Developmental Progress}_{1i}\right) + u_{1i}b_{2i} = \beta_{02} + u_{2i}$$

Results were consistent with Hypothesis 3 (see Table 2). Within-person increases in developmental progress within each domain during established adulthood predicted corresponding increases in well-being (*b*s = .19–.35, SEs = .029–.057, *p*s < .001). Increases in developmental progress in health (*b* = .35) and romantic partner relationship (*b* = .31) exhibited the strongest associations with increases in well-being.

We calculated pseudo-standardized coefficients to provide an index of effect size for within-person developmental goal progress in each domain (Hoffman, 2015; Hoffman & Stawski, 2009). These estimates suggested the observed effect sizes were in the small to medium range for each domain (Cohen, 1988; Funder & Ozer, 2019): child relationship (*b* = .23), romantic relationship (*b* = .36), health (*b* = .30), work (*b* = .28), finances (*b* = .36), and prosocial (*b* = .30).

We also conducted supplemental analyses to evaluate model robustness. First, we conducted multilevel models using the maximum likelihood robust estimator in Mplus, which is robust to the violations of normality assumption. Results were consistent with our main analyses such that within-person increases in goal progress within each domain were positively associated with corresponding increases in well-being (*b*s = .19–.35, *p*s < .001). Second, we conducted multilevel models using a reduced dataset that omitted

Table 3 Joint multilevel growth model predicting change in well-being from changes in developmental progress (Step 3)

Predictor variables	Well-being *b* (SE)
Intercept	16.85 (.093)**
Level 1 (within-person)	
Increases in time	− 0.11 (.060)
Increases in child relationship developmental progress	0.19 (.057)**
Increases in romantic partner relationship developmental progress	0.18 (.049)**
Increases in health developmental progress	0.14 (.071)
Increases in work developmental progress	0.04 (.042)
Increases in financial developmental progress	0.16 (.050)**
Increases in prosocial developmental progress	0.09 (.043)*
Level 2 (between-person)	
Baseline age	0.00 (.046)
Baseline sex (female)	− 0.18 (.196)
Baseline income	0.00 (.00)
Baseline education	0.19 (.043)**
Baseline child relationship developmental progress	0.15 (.080)
Baseline romantic partner relationship developmental progress	0.23 (.059)**
Baseline health developmental progress	0.18 (.076)*
Baseline work developmental progress	0.29 (.059)**
Baseline financial developmental progress	0.02 (.061)
Baseline prosocial developmental progress	0.20 (.054)**

Time and all other Level-1 predictors were baseline centered to examine whether within-person changes in developmental progress predicted within-person changes in well-being. Level-2 baseline predictors were grand-mean centered to facilitate interpretation. All models controlled for cross-level interactions between the Level-2 predictors and Level-1 time variable (parameters not shown for clarity)

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

influential observations with Cook's D values of > .50. Results were again consistent with our main analyses such that within-person increases in goal progress within each domain were positively associated with corresponding increases in well-being (*b*s = .18–.35, *p*s < .001).

Joint Growth Model

A joint multilevel growth model was estimated to test the unique associations between changes in developmental progress within each domain and corresponding changes in well-being (Step 3). Model specification was identical to that described in Step 2, except that all six baseline-centered developmental progress variables were simultaneously included as Level-1 predictor variables. In addition to age, sex, income, and education, baseline developmental progress in all six domains were also included as Level-2 covariates.

Results from our joint growth model were relatively consistent with those observed in Step 2 and provided further support for Hypothesis 3 (see Table 3). Except for work developmental progress ($b = .04$, SE = .042, $p = .378$), and a marginal effect of health developmental progress ($b = .14$, SE = .071, $p = .053$), increases in developmental progress in each domain uniquely predicted corresponding increases in well-being (*b*s = .09–.19, *SE*s = .043–.061, *p*s < .001–.044). Increases in developmental progress in romantic partner ($b = .18$) and children ($b = .19$) relationships exhibited the strongest associations with increases in well-being in the joint model.

However, the joint growth model was reduced from 614 to 378 participants due to missing data on the Level-1 time-varying predictors for developmental progress in relationships with romantic partners and children because these questions were only answered by study participants if they had a romantic partner or a child. We, thus, conducted a supplemental joint growth model that included all 614 participants and accounted for missing data on the time-varying, Level-1 developmental progress predictors using the full-information maximum likelihood method (FIML). Results were consistent with the main analyses, except that increases in health developmental progress significantly predicted increases in well-being in the supplemental model ($b = .17$, SE = .047, $p < .001$).

Demographic Moderators of Codevelopment in Established Adulthood

Separate growth models were estimated to test whether key demographic variables (age, sex, education, and income) moderated the associations between changes in developmental progress and corresponding changes in well-being (Step 4). Level-1 and Level-2 models were specified as shown in Step 2. The only difference was that Level-2 models included a cross-level interaction between the Level-2 demographic predictor and the Level-1 developmental progress variable. For example, the Level-2 model for age was specified as follows:

$$b_{0i} = \beta_{00} + \beta_{01}(\text{Age}_{1i}) + \beta_{02}(\text{Sex}_{1i}) + \beta_{03}(\text{Edu}_{1i}) + \beta_{04}(\text{Income}_{1i}) + \beta_{05}(\text{Developmental Progress}_{1i}) + u_{0i}$$

$$b_{1i} = \beta_{01} + \beta_{11}(\text{Age}_{1i}) + \beta_{12}(\text{Sex}_{1i}) + \beta_{13}(\text{Edu}_{1i}) + \beta_{14}(\text{Income}_{1i}) + \beta_{15}(\text{Developmental Progress}_{1i}) + u_{1i}$$

$$b_{2i} = \beta_{02} + \beta_{21}(\text{Age}_{1i}) + u_{2i}$$

The only relatively consistent pattern of moderation that emerged involved prosocial developmental progress: Increasing prosocial developmental progress was more strongly associated with corresponding changes in well-being for those at the beginning (vs. end; $b = -.03$, SE = .015, $p = .047$) of established adulthood, those with more education (vs. less; $b = .03$, SE = .013, $p < .034$), and those who were male (vs. female; $b = -.12$, SE = .062, $p = .055$). Increasing health developmental progress was also more strongly associated with changes in well-being for males (vs. female; $b = -.25$, SE = .100, $p = .013$). With few exceptions, these findings, thus, suggested that increasing developmental progress predicted positive shifts in well-being across sex, education, income, and stage (age) in established adulthood.

Discussion

Developmental progress in central life domains of adulthood is a hallmark of established adulthood. Theory suggests that developmental progress within central life domains should correspond with increased well-being (Brunstein et al., 1999; Deci & Ryan, 2000; Heckhausen et al., 2010, 2019; Markus & Kitayama, 1994; Oishi & Diener, 2009; Oishi et al., 1999; Sheldon & Elliot, 1999). Using longitudinal data from MIDUS, we tested and found broad support for this proposition. In so doing, our study advances the literature on established adulthood by illustrating how well-being and developmental progress in central life domains of adulthood changes during this time in the lifespan, and how changes in well-being are tied to changes in developmental progress. These findings were rarely moderated by demographic differences. However, our sample was predominately White and middle class, limiting the extent to which we can confidently say that developmental progress is consistently linked with corresponding increases in well-being across demographic groups.

Well-Being and Developmental Progress in Life Domains During Established Adulthood

Our first research question examined how eudaimonic well-being and developmental progress in work, health, social relationships, finances, and prosociality domains changed during established adulthood. Corresponding with previous research suggesting that established adulthood entails high stress, worry, and anger, and low happiness and subjective well-being (Steptoe et al., 2015), we expected (Hypothesis 1) and observed declining levels of overall well-being during established adulthood. Previous cross-sectional findings suggest that some aspects of eudaimonic well-being increase, while others decrease during established adulthood (Ryff, 1989, 1995). We also examined eudaimonic well-being using Ryff's measures of psychological well-being (1989); however, like other studies (Hamm et al., 2019), our study sought to capture how overall well-being developed over time and accordingly our results are based on longitudinal data of the composite of all six dimensions of well-being. Using longitudinal data, our findings suggest that overall levels of eudaimonic well-being may exhibit changes during established adulthood that are more like the declining levels of hedonic well-being (Steptoe et al., 2015) than the increasing levels of some dimensions of eudaimonic well-being (Ryff, 1989, 1995) found in previous cross-sectional research.

Previous research suggests that development in the domains of work, and social relationships with a romantic partner and with one's children take precedence during established adulthood (Salmela-Aro et al., 2007; Shane & Heckhausen, 2016). Our study contributes to this discussion by showing that developmental progress is highest for relationships with one's children and romantic partner, followed by health, work, prosociality, and finances. In line with our expectations, developmental progress in health and relationships with children declined over time (Hypotheses 2e and 2f), while financial developmental progress increased (Hypothesis 2b). Conversely, our expectations for developmental progress in other life domains were not supported, as we did not observe changes in the work, prosociality, or romantic relationships domains (Hypotheses 2a, 2c, and 2d).

The high but declining developmental progress in health reported by our participants reinforces prior findings that this time in the lifespan is often healthier than midlife and late adulthood, but still entails high stress and declining levels of self-reported health (Aldwin et al., 2001; Cullati

et al., 2014; Hamm et al., 2022; Steptoe et al., 2015). Our findings that participants had high but declining levels of developmental progress in their relationships with their children converges with previous research suggesting that the degree of perceived control and relationship satisfaction people have with their children declines as the child ages into adolescence (De Goede et al., 2009; Laursen & Collins, 2009). The low but increasing financial developmental progress also corresponds with our understanding of development during established adulthood, wherein individuals are expected to have completed their education and begun their career (Settersten Jr. & Hagestad, 1996). Established adults are experiencing rising wages and wealth (Bureau of Labor Statistics, 2022) that likely contributed to the increasing sense of financial developmental progress that we observed in our sample.

In the work domain, previous research suggests that individuals expect to settle on a career path and reach a peak in that career path during established adulthood (Settersten Jr. & Hagestad, 1996; Super, 1980). While we observed moderate levels of developmental progress in work, we did not find a significant change in developmental progress during established adulthood. Different career paths may entail different career peaks (Heckhausen et al., 2017; Shane & Heckhausen, 2019), suggesting that mean-level trajectories of work developmental progress during established adulthood may contain substantial variability. We found some support for this in that the variance in within-person change in the work domain was larger than it was for any other domain examined.

Regarding stability of romantic partner relationships, most people were first married by established adulthood for the population cohorts our sample was drawn from (Goodwin et al., 2009). Divorce rates are comparatively lower (Allred, 2019) while relationships are more long term and committed during established adulthood than emerging adulthood (Mehta et al., 2020). Our findings reflect these trends, and coincide with previous findings that engagement with, perceived control over, and perceived quality of, romantic relationships are relatively stable during established adulthood (Shane & Heckhausen, 2016). Turning to stability of prosociality, while individual differences in prosocial-oriented expectancy and value alter the trajectory of prosociality across adulthood (Shane et al., 2021a, 2021b), facets of prosociality such as agreeableness are stable during established adulthood (Specht et al., 2011). Our findings of low and stable prosocial developmental progress during established adulthood extend these previous findings, and suggest that the increased familial and work demands on individuals' time and resources during the "career-and-care-crunch" of established adulthood (Mehta et al., 2020) may restrict prosociality during this period in the life span.

Codevelopment of Well-Being and Developmental Progress in Life Domains During Established Adulthood

Our second research question examined how changes in developmental progress in central life domains predict corresponding changes in eudaimonic well-being during established adulthood. While we found that eudaimonic well-being declined during established adulthood, we also found that developmental progress in key domains of adulthood buffered against these declines in well-being. These findings supported our Hypothesis 3, and provide empirical support for theory suggesting that developmental progress and well-being are intertwined over time (Brunstein et al., 1999; Deci & Ryan, 2000; Heckhausen et al., 2010; Markus & Kitayama, 1994; Oishi & Diener, 2009; Oishi et al., 1999; Sheldon & Elliot, 1999). When examined independently, controlling for age, sex, education, and income, we found that increased developmental progress in each domain examined (health, work, finances, prosociality, relationship with romantic partner, relationship with children) predicted increased well-being, both within-person and between-person. Thus, the degree to which an individual experienced increasing developmental progress in each life domain over time predicted corresponding increases in their well-being over the same time frame (within-person). Relatedly, individuals who reported higher levels of developmental progress in a life domain at baseline reported higher baseline well-being than their peers with lower levels of developmental progress in that life domain (between-person).

Further insight into the relationship between well-being and developmental progress emerged when we examined all life domains jointly. Except for finances, we found between-person effects of developmental progress in each life domain on well-being. Thus, developmental progress in central life domains of adulthood uniquely predicted higher levels of baseline well-being after accounting for the competing influence of developmental progress in other life domains, and age, sex, education, and income. However, we found that only within-person increases for developmental progress in the prosocial, financial, and relationships with romantic partner and with children domains uniquely predicted within-person changes in well-being during established adulthood. This suggests that while developmental progress in life domains pertinent to established adulthood broadly confers enhanced well-being, individuals' well-being may be more responsive to changes in their own prosociality, finances, and relationships with their romantic partner and children than to changes in their work and health.

Our analyses concluded with an examination of whether individual differences in age, sex, education level, and income moderated the relationship between developmental progress and well-being. While developmental goals are

formed from their consensus within a culture (Havighurst, 1948; Heckhausen, 1999; Neugarten et al., 1965), the opportunities to realize these goals (Heckhausen & Buchmann, 2019) and the stress and well-being effects of pursuing these goals (Neighbors et al., 2011; Sellers & Neighbors, 2008), vary based on an individual's demographic characteristics. We nevertheless found few instances of demographic moderation. The most notable pattern of moderation involved prosociality, with men, younger individuals, and those with more education reporting the strongest well-being benefits from developmental progress in the prosociality domain. Previous research indicates that men (Kajonius & Johnson, 2018; Schmitt et al., 2008; Schwartz & Rubel, 2005; Shane & Heckhausen, 2016), individuals with a higher socioeconomic status (Guinote et al., 2015; Piff et al., 2010), and younger adults (Beadle et al., 2015; Sze et al., 2012), are less likely to be prosocial. Our findings, thus, suggest that those who are less likely to be prosocial may reap a bigger benefit to their well-being through prosocial developmental progress. Similarly, albeit to a lesser extent, we found that individuals who are less likely to have a high degree of developmental progress within a domain, in this case men in the domain of health (Arias et al., 2021), reported the greatest benefit from developmental progress within that domain.

Most moderations tested were non-significant, suggesting that individuals may experience similar enhancements to their well-being as they attain developmental progress in central life domains of established adulthood regardless of their age, sex, education level, or income. However, our sample was mostly White, which meant that we were unable to empirically examine whether race and ethnicity moderated the observed relationships. Mean levels of developmental progress and well-being should vary because of the unequal opportunities and constraints individuals experience based on their demographic characteristics; however, it remains to be seen whether the process linking developmental progress and well-being would similarly vary. We expected and found few instances of this variation in the present research, but we did not examine race and ethnicity which previous research suggests may moderate the relationship between goal pursuit and well-being (Neighbors et al., 2011; Sellers & Neighbors, 2008). Norms and expectations about which life domains individuals should be engaged with at different times in the life and how progress within these domains is realized may be broadly shared at the societal level yet vary across cultures within the society. The degree to which societal norms and expectations match one's cultural norms and expectations could affect how an individual's well-being changes in step with developmental progress within a life domain.

Limitations and Future Directions

Experiences within established adulthood are not static across individuals (Mehta et al., 2020). While we examined differences in age, sex, education level, and income, our sample was predominately White, which prevented an examination of whether race and ethnicity moderated the relationship between developmental progress and well-being. Future research with a more diverse sample is needed to understand how race and ethnicity impacts eudaimonic well-being and developmental progress in life domains during established adulthood, as well as whether race and ethnicity moderates the relationship between developmental progress and well-being. Developmental progress made within life domains promoted by the broader society that are not endorsed by one's own culture may alter how one's well-being and developmental progress codevelop. More research with samples of established adults whose cultural norms differ from societal norms would help us better understand how well-being and developmental progress within key life domains of adulthood codevelop during established adulthood. Moreover, our sample consisted of individuals living in the U.S. whose experiences may not reflect those from different countries, or of recent or future cohorts of established adults. Thus, future research is needed to replicate our findings before generalizing them to the broader population.

Our study was also limited by the 9-year spacing between assessments. While this spacing allowed us to examine within- and between-person effects across the 15 years of established adulthood, it prevented us from examining micro-level linkages in changes between developmental progress and well-being. Major life events (e.g., marriage, parenthood, career promotion) may have occurred at any point within that 9-year assessment interval. While previous research examining life events and changes in well-being is mixed (Clark et al., 2008; Clark & Georgellis, 2013; Luhmann et al., 2012; O'Leary et al., 2020), our research can only speak to how overall improvement in life domains over long periods of time corresponds with improved well-being. Future research with more frequent assessments would provide insight into how specific instances of developmental progress are linked with well-being, as well as the permanence of these effects.

Conclusion

The present study contributes to our understanding of development during established adulthood by showing that developmental progress in central life domains of adulthood is associated with corresponding increases in eudaimonic well-being. This finding emerged despite the overall decline in well-being reported by participants

as they aged through established adulthood. Thus, while established adulthood may entail declining well-being, this decline appears to be countered by developmental progress in central areas of life. With few exceptions, similar well-being benefits from developmental progress were reported regardless of the individual's age, sex, education, and income. Our study, thus, contributes to our growing understanding of established adulthood by identifying levels and changes in developmental progress and eudaimonic well-being during established adulthood, and how positive developmental progress corresponds with enhanced well-being during established adulthood.

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Data Availability The data that support the findings of this study are available through the ICPSR at https://www.icpsr.umich.edu/icpsrweb/ICPSR/series/203.

Code Availability Syntax to recreate data analysis is available from the authors upon request.

Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval Data collection was approved by the University of Wisconsin-Madison IRB, and secondary data analysis was approved by the lead author's institution IRB (CUNY Brooklyn College: IRB# 2017-0892).

Consent to Participate Not applicable.

Consent for Publication Not applicable.

References

Aldwin, C. M., Spiro, A., III., Levenson, M. R., & Cupertino, A. P. (2001). Longitudinal findings from the normative aging study: III. Personality, individual health trajectories, and mortality. *Psychology and Aging, 16*(3), 450–465. https://doi.org/10.1037//0882-7974.16.3.450

Allred, C. (2019). Age variation in the divorce rate, 1990 & 2017. *Family profiles, FP-19-13.* National Center for Family & Marriage Research. https://doi.org/10.25035/ncfmr/fp-19-13

Antonucci, T., Akiyama, H., & Takahashi, K. (2004). Attachment and close relationships across the life span. *Attachment & Human Development, 6*(4), 353–370. https://doi.org/10.1080/1461673042000303136

Arias, E., Bastian, B., Xu, J. Q., & Tejada-Vera, B. (2021). U.S. state life tables, 2018. *National vital statistics reports.* National Center for Health Statistics. https://doi.org/10.15620/cdc:101128

Atherton, O. E., Grijalva, E., Roberts, B. W., & Robins, R. W. (2021). Stability and change in personality traits and major life goals from college to midlife. *Personality and Social Psychology Bulletin, 47*(5), 841–858. https://doi.org/10.1177/0146167220949362

Baltes, P. B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of developmental theory. *American Psychologist, 52*(4), 366–380. https://doi.org/10.1037/0003-066X.52.4.366

Batson, C. D. (1998). Altruism and prosocial behavior. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (Vol. 2, pp. 282–316). McGraw-Hill. https://doi.org/10.1002/0471264385.wei0519

Beadle, J. N., Sheehan, A. H., Dahlben, B., & Gutchess, A. H. (2015). Aging, empathy, and prosociality. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 70*, 213–224. https://doi.org/10.1093/geronb/gbt091

Branje, S. (2018). Development of parent–adolescent relationships: Conflict interactions as a mechanism of change. *Child Development Perspectives*, *12*(3), 171–176. https://doi.org/10.1111/cdep.12278

Brunstein, J. C., Schultheiss, O. C., & Maier, G. W. (1999). The pursuit of personal goals: A motivational approach to well-being and life-adjustment. In J. Brandtstädter & R. M. Lerner (Eds.), *Action and development: Theory and research through the life span* (pp. 169–196). Sage. https://doi.org/10.4135/9781452204802

Buchinger, L., Richter, D., & Heckhausen, J. (2021). The development of life goals over the adult lifespan. *The Journals of Gerontology: Series B, Psychological Sciences and Social Sciences*. https://doi.org/10.1093/geronb/gbab154

Bühler, J. L., Weidmann, R., Nikitin, J., & Grob, A. (2019). A closer look at life goals across adulthood: Applying a developmental perspective to content, dynamics, and outcomes of goal importance and goal attainability. *European Journal of Personality, 33*(3), 359–384. https://doi.org/10.1002/per.2194

Bureau of Labor Statistics. (2022). *Usual weekly earnings of wage and salary workers first quarter 2022*. Retrieved May 10, 2022, from https://www.bls.gov/news.release/pdf/wkyeng.pdf

Carmichael, C. L., Reis, H. T., & Duberstein, P. R. (2015). In your 20s it's quantity, in your 30s it's quality: The prognostic value of social activity across 30 years of adulthood. *Psychology and Aging, 30*(1), 95–105. https://doi.org/10.1037/pag0000014

Clark, A. E., Diener, E., Georgellis, Y., & Lucas, R. E. (2008). Lags and leads in life satisfaction: A test of the baseline hypothesis. *The Economic Journal, 118*(529), F222–F243. https://doi.org/10.1111/j.1468-0297.2008.02150.x

Clark, A. E., & Georgellis, Y. (2013). Back to baseline in Britain: Adaptation in the British household panel survey. *Economica, 80*(319), 496–512. https://doi.org/10.1111/ecca.12007

Cloninger, C. R., Salloum, I. M., & Mezzich, J. E. (2012). The dynamic origins of positive health and wellbeing. *International Journal of Person Centered Medicine, 2*(2), 179. https://doi.org/10.5750/ijpcm.v2i2.213

Cohen, J. (1988). Statistical power analysis for the behavioral sciences. Second Edition. Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Cullati, S., Rousseaux, E., Gabadinho, A., Courvoisier, D. S., & Burton-Jeangros, C. (2014). Factors of change and cumulative factors in self-rated health trajectories: A systematic review. *Advances in Life Course Research, 19*, 14–27. https://doi.org/10.1016/j.alcr.2013.11.002

De Goede, I. H. A., Branje, S. J. T., & Meeus, W. H. J. (2009). Developmental changes in adolescents' perceptions of relationships with their parents. *Journal of Youth and Adolescence, 38*(1), 75–88. https://doi.org/10.1007/s10964-008-9286-7

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2008). Facilitating optimal motivation and psychological well-being across life's domains. *Canadian Psychology, 49*(1), 14–23. https://doi.org/10.1037/0708-5591.49.1.14

Diener, E., & Biswas-Diener, R. (2002). Will money increase subjective well-being? A literature review and guide to needed research. *Social Indicators Research, 57*, 119–169. https://doi.org/10.1007/978-90-481-2350-6_6

Dietrich, J., Shulman, S., & Nurmi, J.-E. (2013). Goal pursuit in young adulthood: The role of personality and motivation in goal appraisal trajectories across 6 years. *Journal of Research in Personality, 47*(6), 728–737. https://doi.org/10.1016/j.jrp.2013.06.004

Dittmar, H., Bond, R., Hurst, M., & Kasser, T. (2014). The relationship between materialism and personal well-being: A meta-analysis. *Journal of Personality and Social Psychology, 107*(5), 879–924. https://doi.org/10.1037/a0037409

Funder, D. C., & Ozer, D. J. (2019). Evaluating effect size in psychological research: Sense and nonsense. *Advances in Methods and Practices in Psychological Science*, 2, 156–168. https://doi.org/10.1177/2515245919847202

Goodwin P, McGill B, & Chandra A. (2009). *Who marries and when? Age at first marriage in the United States, 2002*. NCHS data brief, no 19. Hyattsville, MD: National Center for Health Statistics. Retrieved May 10, 2022, from, https://www.cdc.gov/nchs/data/databriefs/db19.pdf

Guinote, A., Cotzia, I., Sandhu, S., & Siwa, P. (2015). Social status modulates prosocial behavior and egalitarianism in preschool children and adults. *Proceedings of the National Academy of Sciences of the United States of America, 112*, 731–736. https://doi.org/10.1073/pnas.1414550112

Hamm, J. M., Heckhausen, J., Shane, J., Infurna, F. J., & Lachman, M. E. (2019). Engagement with six major life domains during the transition to retirement: Stability and change for better or worse. *Psychology and Aging, 34*(3), 441–456. https://doi.org/10.1037/pag0000343

Hamm, J. M., Tan, J. Y. X., Barlow, M. A., Delaney, R. L., & Duggan, K. A. (2022). Goal adjustment capacities in uncontrollable life circumstances: Benefits for psychological well-being during COVID-19. *Motivation and Emotion, 46,* 319–335 (2022). https://doi.org/10.1007/s11031-022-09941-6

Havighurst, R. J. (1948). *Developmental tasks and education*. University of Chicago Press.

Heckhausen, J. (1999). *Developmental regulation in adulthood: Age-normative and sociostructural constraints as adaptive challenges*. Cambridge University Press. https://doi.org/10.1017/CBO9780511527852

Heckhausen, J., & Buchmann, M. (2019). A multi-disciplinary model of life-course canalization and agency. *Advances in Life Course Research, 41*, 100246. https://doi.org/10.1016/j.alcr.2018.09.002

Heckhausen, J., Shane, J., & Kanfer, R. (2017). Competence and motivation at work throughout adulthood: Making the most of changing capacities and opportunities. In A. Elliot, C. S. Dweck, & D. Yeager (Eds.), *Handbook of competence and motivation: Theory and application* (pp. 240–256). Guilford Press.

Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span development. *Psychological Review, 117*, 32–60. https://doi.org/10.1037/a0017668

Heckhausen, J., Wrosch, C., & Schulz, R. (2019). Agency and motivation in adulthood and old age. *Annual Review of Psychology, 70*, 191–217. https://doi.org/10.1146/annurev-psych-010418-103043

Hoffman, L. (2015). Longitudinal analysis: Modeling within-person fluctuation and change. Routledge. https://doi.org/10.4324/9781315744094

Hoffman, L., & Stawski, R. S. (2009). Persons as contexts: Evaluating between-person and within-person effects in longitudinal analysis. *Research in Human Development*, *6*(2–3), 97–120. https://doi.org/10.1080/15427600902911189

Hirst, M. (2005). Carer distress: A prospective, population-based study. *Social Science & Medicine, 61*(3), 697–708. https://doi.org/10.1016/j.socscimed.2005.01.001

Hui, B. P. H., Ng, J. C. K., Berzaghi, E., Cunningham-Amos, L. A., & Kogan, A. (2020). Rewards of kindness? A meta-analysis of the link between prosociality and well-being. *Psychological Bulletin, 146*(12), 1084–1116. https://doi.org/10.1037/bul0000298

Jebb, A. T., Tay, L., Diener, E., & Oishi, S. (2018). Happiness, income satiation and turning points around the world. *Nature Human Behaviour, 2*(1), 33–38. https://doi.org/10.1038/s41562-017-0277-0

Kajonius, P. J., & Johnson, J. (2018). Sex differences in 30 facets of the five factor model of personality in the large public (N = 320,128). *Personality and Individual Differences, 129*, 126–130. https://doi.org/10.1016/j.paid.2018.03.026

Klug, H. J. P., & Maier, G. W. (2015). Linking goal progress and subjective well-being: A meta-analysis. *Journal of Happiness Studies, 16*(1), 37–65. https://doi.org/10.1007/s10902-013-9493-0

Laursen, B., & Collins, W. A. (2009). Parent-child relationships during adolescence. In R. M. Lerner & L. Steinberg (Eds.), *Handbook of adolescent psychology* (3rd ed., pp. 3–42). Wiley. https://doi.org/10.1002/9780470479193.adlpsy002002/full

Lee, J. C., & Mortimer, J. T. (2009). Family socialization, economic self-efficacy, and the attainment of financial independence in early adulthood. *Longitudinal and Life Course Studies, 1*(1), 45–62.

Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Journal of Personality and Social Psychology, 102*(3), 592–615. https://doi.org/10.1037/a0025948

Maggiori, C., Johnston, C. S., Krings, F., Massoudi, K., & Rossier, J. (2013). The role of career adaptability and work conditions on general and professional well-being. *Journal of Vocational Behavior, 83*(3), 437–449. https://doi.org/10.1016/j.jvb.2013.07.001

Markus, H. R., & Kitayama, S. (1994). The cultural construction of self and emotion: Implications for social behavior. In S. Kitayama & H. R. Markus (Eds.), *Emotion and culture: Empirical studies of mutual influence* (pp. 89–130). American Psychological Association. https://doi.org/10.1037/10152-000

Mehta, C. M., Arnett, J. J., Palmer, C. G., & Nelson, L. J. (2020). Established adulthood: A new conception of ages 30 to 45. *The American Psychologist, 75*(4), 431–444. https://doi.org/10.1037/amp0000600

Messersmith, E. E., & Schulenberg, J. E. (2010). Goal attainment, goal striving, and well-being during the transition to adulthood: A ten-year U.S. national longitudinal study. In S. Shulman & J.-E. Nurmi (Eds.), *The role of goals in navigating individual lives during emerging adulthood* (pp. 27–40). New Directions for Child and Adolescent Development. https://doi.org/10.1002/cd.279

Muthén, L. K., & Muthén, B. O. (1998–2017). Mplus User's Guide. Eighth Edition. Los Angeles, CA: Author. https://www.statmodel.com/download/usersguide/MplusUserGuideVer_8.pdf

Neighbors, H. W., Sellers, S. L., Zhang, R., & Jackson, J. S. (2011). Goal-striving stress and racial differences in mental health. *Race and Social Problems, 3*(1), 51–62. https://doi.org/10.1007/s12552-011-9042-6

Neugarten, B. L., Moore, J. W., & Lowe, J. C. (1965). Age norms, age constraints, and adult socialization. *American Journal of Sociology, 70*(6), 710–717. https://doi.org/10.1086/223965

Ng, T. W. H., & Feldman, D. C. (2007). Organizational embeddedness and occupational embeddedness across career stages. *Journal of Vocational Behavior, 70*(2), 336–351. https://doi.org/10.1016/j.jvb.2006.10.002

Ng, T. W. H., & Feldman, D. C. (2014). Embeddedness and well-being in the United States and Singapore: The mediating effects of work-to-family and family-to-work conflict. *Journal of Occupational Health Psychology, 19*(3), 360–375. https://doi.org/10.1037/a0036922

O'Leary, N., Li, I. W., Gupta, P., & Blackaby, D. (2020). Wellbeing trajectories around life events in Australia. *Economic Modelling, 93*, 499–509. https://doi.org/10.1016/j.econmod.2020.08.021

Oishi, S., & Diener, E. (2009). Goals, culture, and subjective well-being. In E. Diener (Ed.), *Culture and well-being* (pp. 93–108). Springer. https://doi.org/10.1007/978-90-481-2352-0_5

Oishi, S., Diener, E., Suh, E., & Lucas, R. E. (1999). Value as a moderator in subjective well-being. *Journal of Personality, 67*(1), 157–184. https://doi.org/10.1111/1467-6494.00051

Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology, 56*, 365–392. https://doi.org/10.1146/annurev.psych.56.091103.070141

Piff, P. K., Kraus, M. W., Côté, S., Cheng, B. H., & Keltner, D. (2010). Having less, giving more: The influence of social class on prosocial behavior. *Journal of Personality and Social Psychology, 99*, 771–784. https://doi.org/10.1037/a0020092

Ranta, M., Dietrich, J., & Salmela-Aro, K. (2014). Career and romantic relationship goals and concerns during emerging adulthood. *Emerging Adulthood, 2*(1), 17–26. https://doi.org/10.1177/2167696813515852

Rosato, M., Tseliou, F., Wright, D. M., Maguire, A., & O'Reilly, D. (2019). Are volunteering and caregiving associated with suicide risk? A census-based longitudinal study. *BMC Psychiatry, 19*, 1–10. https://doi.org/10.1186/s12888-019-2255-8

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

Ryff, C. D. (1995). Psychological well-being in adult life. *Current Directions in Psychological Science, 4*(4), 99–104. https://doi.org/10.1111/1467-8721.ep10772395

Ryff, C. D. (2014). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics, 83*(1), 10–28. https://doi.org/10.1159/000353263

Ryff, C. D. (2018). Well-being with soul: Science in pursuit of human potential. *Perspectives on Psychological Science, 13*(2), 242–248. https://doi.org/10.1177/1745691617699836

Ryff, C. D., Almeida, D., Ayanian, J., Binkley, N., Radler, B., Carr, D. S., Coe, C., Davidson, R., Grzywacz, J., Karlamangla, A., Krueger, R., Lachman, M., Love, G., Mailick, M., Mroczek, D., Radler, B., Seeman, T., Sloan, R., Thomas, D., Weinstein, M., & Williams, D. (2017). Midlife in the United States (MIDUS 3), 2013–2014. Interuniversity Consortium for Political and Social Research. https://doi.org/10.3886/ICPSR36346.v6

Salmela-Aro, K., Aunola, K., & Nurmi, J.-E. (2007). Personal goals during emerging adulthood. *Journal of Adolescent Research, 22*(6), 690–715. https://doi.org/10.1177/0743558407303978

Schmitt, D. P., Realo, A., Voracek, M., & Allik, J. (2008). Why can't a man be more like a woman? Sex differences in big five personality traits across 55 cultures. *Journal of Personality and Social Psychology, 94*, 168–182. https://doi.org/10.1037/0022-3514.94.1.168

Schulenberg, J., Bryant, A. L., & O'Malley, P. M. (2004). Taking hold of some kind of life: How developmental tasks relate to trajectories of well-being during the transition to adulthood. *Development and Psychopathology, 16*, 1119–1140. https://doi.org/10.1017/S0954579404040167

Schwartz, S. H., & Rubel, T. (2005). Sex differences in value priorities: Cross-cultural and multimethod studies. *Journal of Personality and Social Psychology, 89*, 1010–1028. https://doi.org/10.1037/0022-3514.89.6.1010

Sellers, S., & Neighbors, H. (2008). Goal-striving stress and the mental health of Black Americans. *Journal of Health and Social Behavior, 49*, 92–103. https://doi.org/10.1177/002214650804900107

Settersten, R. A., Jr., & Hagestad, G. O. (1996). What's the latest? II. Cultural age deadlines for educational and work transitions. *The Gerontologist, 36*(5), 602–613. https://doi.org/10.1093/geront/36.5.602

Shane, J., & Heckhausen, J. (2012). Motivational self-regulation in the work domain: Congruence of individuals' control striving and the control potential in their developmental ecologies. *Research in Human Development, 9*(4), 337–357. https://doi.org/10.1080/15427609.2012.729918

Shane, J., & Heckhausen, J. (2016). Optimized engagement across life domains in adult development: Balancing diversity and interdomain consequences. *Research in Human Development*, *13*, 280–296. https://doi.org/10.1080/15427609.2016.1234308

Shane, J., & Heckhausen, J. (2019). Motivational theory of life-span development. In B. B. Baltes, C. Rudolph, & H. Zacher (Eds.), *Work across the lifespan* (pp. 111–134). Elsevier. https://doi.org/10.1016/B978-0-12-812756-8.00005-0

Shane, J., Luerssen, A., & Carmichael, C. L. (2021a). Friends, family, and romantic partners: Three critical relationships in older women's lives. *Journal of Women & Aging, 33*(4), 378–395. https://doi.org/10.1080/08952841.2020.1838238

Shane, J., Niwa, E. Y., & Heckhausen, J. (2021b). Prosociality across adulthood: A developmental and motivational perspective. *Psychology and Aging, 34*(1), 22–35. https://doi.org/10.1037/pag0000514

Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology, 76*(3), 482–497. https://doi.org/10.1037/0022-3514.76.3.482

Sliwinski, M., & Buschke, H. (1999). Cross-sectional and longitudinal relationships among age, cognition, and processing speed. *Psychology and Aging, 14*(1), 18. https://doi.org/10.1037/0882-7974.14.1.18

Sliwinski, M., & Buschke, H. (2004). Modeling intraindividual cognitive change in aging adults: Results from the Einstein aging studies. *Aging Neuropsychology and Cognition, 11*(2–3), 196–211. https://doi.org/10.1080/13825580490511080

Sliwinski, M., & Mogle, J. (2008). Time-based and process-based approaches to analysis of longitudinal data. *Handbook of Cognitive Aging: Interdisciplinary Perspectives*. https://doi.org/10.4135/9781412976589

Specht, J., Egloff, B., & Schmukle, S. C. (2011). Stability and change of personality across the life course: The impact of age and major life events on mean-level and rank-order stability of the big five. *Journal of Personality and Social Psychology, 101*(4), 862–882. https://doi.org/10.1037/a0024950

Steptoe, A., Deaton, A., & Stone, A. A. (2015). Subjective wellbeing, health, and ageing. *The Lancet, 385*(9968), 640–648. https://doi.org/10.1016/s0140-6736(13)61489-0

Stevenson, B., & Wolfers, J. (2013). Subjective well-being and income: Is there any evidence of satiation? *The American Economic Review, 103*(3), 598–604. https://doi.org/10.1257/aer.103.3.598

Stumpf, S. A. (2014). A longitudinal study of career success, embeddedness, and mobility of early career professionals. *Journal of Vocational Behavior, 85*(2), 180–190. https://doi.org/10.1016/j.jvb.2014.06.002

Super, D. E. (1980). A life-span, life-space approach to career development. *Journal of Vocational Behavior, 16*(3), 282–298. https://doi.org/10.1016/0001-8791(80)90056-1

Sze, J. A., Gyurak, A., Goodkind, M. S., & Levenson, R. W. (2012). Greater emotional empathy and prosocial behavior in late life. *Emotion, 12*, 1129–1140. https://doi.org/10.1037/a0025011

U.S. Census Bureau. (2021). *Income and poverty in the United States: 2020*. Report number P60-273. Retrieved May 10, 2022, from https://www.census.gov/data/tables/2021/demo/income-poverty/p60-273.html

Wrzus, C., Hänel, M., Wagner, J., & Neyer, F. J. (2013). Social network changes and life events across the life span: A meta-analysis. *Psychological Bulletin, 139*(1), 53–80. https://doi.org/10.1037/a0028601

Yau, P. S., Shane, J., & Heckhausen, J. (2021). Developmental goals during the transition to young adulthood. *International Journal of Behavioral Development*. https://doi.org/10.1177/01650254211007564

Zacher, H., Ambiel, R. A. M., & Noronha, A. P. P. (2015). Career adaptability and career entrenchment. *Journal of Vocational Behavior, 88*, 164–173. https://doi.org/10.1016/j.jvb.2015.03.006