

Personal Growth and Personality Development: Well-being and Ego Development

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by

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This is dedicated to two of my high school teachers, Mr. Martin Smith, who inspired my love for science, and Mr. Brian Clark, who inspired my love for psychology.

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# Personal Growth and Personality Development: Well-being and Ego Development

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## ABSTRACT

Personal growth is conceptualized as the phenomenological experience of self-directed growth, which has been found to be related to positive functioning. The question remains, does the phenomenological experience of personal growth also relate to actual personality development? The current research assessed personal growth, well-being (both psychological well-being and subjective well-being), and ego development in two studies. Study 1 assessed a sample of 176 community adults and found that personal growth was related to both ego development and life satisfaction. Study 2 followed a sample of 122 first year college students over the course of a year and a half. Again, personal growth was related to both ego development and subjective well-being, concurrently. Further, Study 2 also explored the prospective relationships between personal growth, well-being, and ego development. Only subjective well-being at Time 1 uniquely predicted personal growth at Time 2. Results are discussed in reference to personal growth, personality development, and maturity.

## Introduction

It is not uncommon for individuals to feel that they have grown through difficult life circumstances. Looking back upon earlier versions of ourselves we often feel that we have grown, improved, or become “better people” through life experience (e.g., King, 2001; Calhoun & Tedeschi, 2006). The experience of personal growth is certainly incorporated into naïve notions of development as well as psychological approaches to well-being (Ryff, 1989). Indeed, the feeling that one is growing is associated with well-being. However, the extent to which this phenomenological experience of having grown reflects real developmental change remains a question open to empirical inquiry. When personality psychologists discuss personality development they are often talking about either changes in traits over time (e.g., Roberts & Mroczek, 2008; Roberts & Wood, 2006), or changes in the wisdom (e.g., Baltes & Staudinger, 2000) or complexity (Loevinger, 1976) that are presumably unavailable to straightforward self-report. The purpose of the present studies is to examine the relationships between subjective feelings of personal growth and a measure of the complexity with which an individual experiences him or herself and the world. In addition, these studies examine the relations of feelings of personal growth, well-being, and complexity. In other words, in these studies we examine the potential relationships between the phenomenological experience of personal growth and an objective measure of ego development. Recently, an approach to maturity has been suggested (King & Hicks, 2007) that incorporates two sides: positive subjective feelings of well-being and the complex sensibility represented by ego development. In this investigation we expand on this conceptualization to address whether measures of positive functioning, in particular personal growth, relate to ego



development (Study 1) and whether positive functioning and ego development predict each other prospectively, over time (Study 2). Before describing the proposed studies in detail, the variables of interest warrant some discussion.

### *Personal Growth*

Broadly, we might define personal growth as the subjective experience of change, in behaviors, thoughts, and feelings which are in turn experienced as adaptive. Such change might take form as greater mastery of one's everyday environment or it might arise as greater resilience in the face of obstacles and challenges. Personal growth might be experienced as coming about as a result of various life experiences; for instance, the experience of a trauma or attending a leadership conference might be believed to result in growth. On the other hand, personal growth might be an activity that one is dynamically engaged in, such that each day one sets aside time to play scales on the piano or run three miles, for example. Some individuals may self-consciously "work on themselves" to attain higher levels of those abilities, skills, and characteristics they value.

Certainly, when faced with a traumatic or stressful experience, individuals often report a sense of having grown from the experience (e.g., Tedeschi & Calhoun, 1995; Park, Cohen, & Murch, 1996). In some way or another, these experiences are interpreted as having taught us something about ourselves and about the world. Reports of stress-related growth are, in turn, related to heightened well-being (Park et al., 1996). Feeling that one has grown from a negative life event is often viewed as a powerful form of reappraisal or benefit-finding, a type of coping that is generally quite adaptive. Yet, importantly, such growth is generally a wholly subjective phenomenon. To date, research

on self-reported growth has not incorporated measures (beyond self-report measures of well-being) that might corroborate these subjective assessments.

Given the lack of alternative methods to provide convergence with subjective reports of growth, such reports are open to a number of interpretations which call into question the notion that reports of personal growth are indeed reflective of real developmental change. Clearly, self-reported personal growth might just be a positive illusion (Taylor & Armor, 1996). For instance, individuals may engage in self-enhancement by making retroactive derogations of their previous self in order to enhance the current self-image (McFarland & Alvaro, 2000). Self-perceived growth might also be the byproduct of cognitive dissonance (Taylor & Armor, 1996). For instance, a challenging experience often elicits evidence that contradicts worldviews and or beliefs about the self. This contradiction in beliefs, or cognitive dissonance, results in distress, which we are in turn motivated to reduce. A route by which such distress might be reduced is to add positive cognitions about the experience, such as having grown or gained something valuable from the experience. Whether or not reports of personal growth are reflections of such processes or reflect actual developmental change, there is no question that this phenomenological feeling of growth is related to other outcomes of positive functioning, such as lower depression and higher well-being (Helgeson, Reynolds, & Tomich, 2006).

Indeed, Ryff and colleagues (e.g., Ryff, 1989; Ryff & Keyes, 1995) have theorized that personal growth shares an important place in the qualities that define optimal thriving, or psychological well-being, along with self-acceptance, positive relations with others, autonomy, environmental mastery, and purpose in life. According

to Ryff's conceptualization, personal growth reflects directed engagement in continual development, openness towards novel events and people, and effortful expansion and improvement, all in the pursuit of reaching high towards one's potential. Personal growth, like the other five components of psychological well-being, is related to other indicators of positive functioning (Ryff & Keyes, 1995), although with mixed and weak results. Yet, Ryff and Singer (2008) note that personal growth, of all the aspects of psychological well-being, is most similar to the pursuit of self-actualization, an aspect often discussed within the realms of personality development. Further, an exploration of the underlying factor structure of well-being, which included the six components of psychological well-being, life satisfaction, and positive and negative affect, confirmed that personal growth is subsumed under a well-being factor descriptive of meaningful, purposeful striving and engagement. Personal growth was not an underlying component of the subjective well-being factor, which encompassed affect and happiness (Keyes, Shmotkin, & Ryff, 2002). Thus, the current research explores whether personal growth is actually related to personality development or not. We now turn to the topic of personality development.

### *Personality development*

As noted earlier, a recent conceptualization of maturity as the convergence of a sense of well-being and a complex sensibility has been presented (King & Hicks, 2007). According to this perspective, development in adulthood can be understood as increasing levels of well-being on the one hand, and increasing sophistication and differentiation in one's perception of oneself and the world on the other hand. The importance of well-being as an aspect of maturity is supported by a number of theories that converge on the

notion that development entails enhanced emotion regulation and the maximization of positive affect (e.g., Carstensen, Isaacowitz, & Charles, 1999; Labouvie-Vief, 2003). Indeed, empirical evidence suggests that older individuals do report themselves as higher on positive affect than younger individuals, and that positive affect increases with age (Mroczek & Kolarz, 1998; Mroczek, 2001). The other side of maturity, a complex sensibility, has been measured using Loevinger's construct of ego development.

Ego development refers to varying stages of development characterized by degrees of complexity of thinking, regulatory control, and perspective with which an individual identifies oneself in relation to the world (Loevinger, 1976). In response to life experiences, the current ego frame is used as a reference from which one can safely and effectively search for and maintain a coherent sense of meaning and sense of stability. Upward development of ego development progresses from simpler level constructs and results in levels of increasing differentiation and integration (Lerner, 1998). At the lowest stage of ego development the individual is subject to physical needs and impulses, reliant on others to fulfill needs and regulate behavior. The individual comes to learn rules and begins to understand causality and responsibility. Eventually the comfort of belongingness, social conformity, and stereotyping are discovered. Mid-level stages of ego development are characterized by development towards awareness of the self, the ability to reflect and set self-standards, and to establish goal strivings. Individuals at the highest stages of ego development are capable of recognizing not only individuality, but the interdependence through which people are connected. High ego individuals embrace tolerance and respect the autonomy of others. Recognition of and openness to varying interpretations of the complex and multifaceted nature of situations and experiences are

also apparent. Ego development has also been likened to the development of character (Loevinger, 1976; Westen, 1998).

Like the subjective feeling of personal growth, ego development has been suggested to occur in response to challenging life events, or “pacers”. Loevinger described pacers as experiences that challenge an individual to revise their organismic frame. Similarly in adopting Piaget’s notion of accommodation to personality development, Block (1982) suggested that when experience challenges one’s current meaning structures, the individual must revise these structures or create new ones that make sense of one’s current circumstances. Research has shown that, indeed, ego development is related to life events (e.g., Helson, 1992; Helson & Roberts, 1994; Helson, & Wink, 1987). Ego level is not considered accessible to self-report, as it is in fact measured by the Sentence Completion Test (Hy & Loevinger, 1996).

Narratives about difficult life transitions have been shown to relate to concurrent and prospective personality development. Individuals who use imagery suggesting being challenged, having difficulty coping, or experiencing a paradigmatic shift have been shown to be higher in ego development, and to be more likely to increase in ego development over time (King, Scollon, Ramsey, & Williams, 2000). In addition, narratives which reveal exploratory processing were found to mediate the relationship between coping openness in young adulthood and emotional maturity, which is reflective of ego development, in old age (Pals, 2006). These narrative studies suggest that while ego level is not available to awareness, the hard work of accommodation may well impact consciousness and might be available to self-report. In addition, at higher stages

of ego development identity is a preoccupation; thus, personal growth might be a salient theme to those who are engaged in such a preoccupation with the self and one's identity.

Importantly, a variety of studies have shown no relationship between ego development and well-being (e.g., Helson & Wink, 1987; King et al., 2000; Noam, 1998; Vaillant & McCullough, 1987). Furthermore, in one study in which measures of stress-related growth and ego development were both included, these measures were unrelated (King et al., 2000). In their studies of growth-oriented goals and development, Bauer and McAdams (2004a;b) measured psychological well-being, life satisfaction, and ego development. Across all studies, life satisfaction and ego development were unrelated. With regards to psychological well-being and ego development, a moderate positive relation was observed in only one sample. Thus, there is no strong evidence to date suggesting that self reports of personal growth relate to this "other side" of maturity.

#### *Overview of studies*

The aims of the current set of studies are twofold. First, Study 1 investigates the covariation between personal growth and personality development, as measured by ego development, in a sample of community adults. We tested the hypothesis that personal growth would be positively related to ego development. Based on previous research, we also expected to observe a relationship between personal growth and life satisfaction. Study 2 further explored the relationship of personal growth with subjective well-being and ego development in a study that followed incoming first year students over the course of their first semester at college. We explored the concurrent and prospective relationships between personal growth, subjective well-being, and ego development. We predicted that personal growth would be more strongly related to ego development than

to subjective well-being, when assessed concurrently. We explored the prospective relationships between personal growth and subjective well-being and ego development. Finally, based on previous research we expected there to be no concurrent relationship between subjective well-being and ego development; however, we explored the prospective relationship between well-being and ego development.

## Study 1

### *Methods*

#### *Participants*

A sample of 176 health-allied professionals (13 men, 160 women, 3 not reporting) was recruited during the lunch break at various continuing education workshops. Participation was completely voluntary and no inducement was used to ensure participation. All participants remained entirely anonymous and took approximately 10-15 minutes to complete all tasks. The workshops took place in a variety of towns and cities in the state of Washington (N = 79; drawn from the Seattle-Tacoma area) and Texas (N = 97; drawn from the Dallas-Fort Worth Metroplex, Wichita Falls, San Angelo, and Waco). Overall, mean age was 49.0 (SD = 10.50) and ages ranged from 28 to 76. The ethnic breakdown of the sample was 83.5% European American, 1.7% African American, 10.2% Hispanic, 1.7% Asian American, and the rest not reporting. The health-allied professionals were predominantly nurses and mental-health professionals, but also included a mix of massage therapists, pharmacists, hypno-therapists, dieticians, nutritionists and other health related professionals. In the Washington sample the average age was 48.97 (SD = 10.60) and age ranged from 29 to 76, while mean age was 49.05 (SD = 10.98) and age ranged from 28 to 70 in the Texas sample. In the Washington

sample the ethnic breakdown of the group was 93.7% European American, 1.3% African American, and the rest not reporting. In the Texas sample, the ethnic breakdown of the group was 75.3% European American, 2.1% African American, 18.6% Hispanic, 3.1% Asian American, and the rest not reporting.

### *Materials & Procedure*

*Satisfaction With Life Scale.* The cognitive component of subjective well-being was assessed with the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). Participants responded to the five items SWLS using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items include “I am satisfied with my life” and “In most ways my life is close to my ideal.”

*Psychological Well-Being.* The Psychological Well-Being Scale (PWB, Ryff & Keyes, 1995) was used to assess positive functioning on six dimensions: autonomy (e.g. “I tend to be influenced by people with strong opinions”), environmental mastery (e.g. “The demands of everyday life often get me down”), self-acceptance (e.g. “I like most aspects of my personality”), relatedness (e.g. “People would describe me as a giving person, willing to share my time with others”), purpose in life (e.g. “I live life one day at a time and don’t really think about the future”), and personal growth (e.g. “For me, life has been a continuous process of growing, changing and growth”). The PWB scale includes 18 items in total, each of which are rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Because we were specifically interested in personal growth, this subscale was computed separately, and the other five subscales were aggregated to create a PWB composite that did not include personal growth. Using



this composite also circumvented potential issues of multicollinearity in the multivariate analyses.

*Ego Development.* Due to time constraints, participants completed only 9 items from the Sentence Completion Test (SCT; Loevinger & Wessler, 1970; Hy & Loevinger, 1996). The SCT normally consists of either 18 or 36 items, in which participants are given stems and space to complete the statements. When scored according to guidelines, the SCT has shown good test-retest, inter-rater, and internal consistency reliability (e.g., Loevinger & Wessler, 1970). The SCT responses were transcribed so that all responses to a given item were listed together for the entire sample. Separation of participant responses across all items prevents the rating of one item from influencing ratings on other items. Two raters were trained in the scoring system, using the guide developed by Hy and Loevinger (1996), and had achieved high agreement (>96%) with expert scoring on practice materials before actual ratings took place. Item ratings were compared across raters and disagreements of more than two ego levels were discussed. Out of 1,114 judgments, disagreements equal to or greater than two ego levels occurred only 9 times. All disagreements (a total of 27 or 97.6% agreement) were resolved by discussion among the raters and a third expert rater.

The SCT is typically scored using automatic ogive rules that dictate the appropriate total protocol score for a given individual's distribution of scores. Loevinger has argued that this is the best "final score" for the SCT. Again, due to time constraints this sample only completed 9 sentence stems. As such, the ogive rules could not be applied to these data. A number of alternatives were considered, including the mean, the mode, and the maximum score across the 9 items. Each of these alternatives has potential

merits and pitfalls. Loevinger (1976) argued against the use of the mean across all items because the SCT items are not assumed to draw equally on ego development level. Some items might evoke higher level responses than others. Yet the internal consistency across the 9 items was  $\alpha = .74$ , which provided some evidence to justify the use of the mean. The modal response for each individual across the 9 items might be viewed as the most similar to the total protocol, as derived from the ogive rules, and certainly would seem to represent the individual's characteristic level of ego development. However, the mode might not capture the person's capacity or potential and might underestimate ego level, as a result. The maximum score across the 9 items might better characterize the person's highest potential. The maximum response has some attractive features. This response would seem most likely to capture the highest ego level expressed by the person across the 9 items. However, based (potentially) on a single response this score might be less reliable than either the mean or the mode. Yet, it is worth noting that while it may be likely (and even expected) that an individual occupying a higher level of ego development might randomly respond to a stem with a low level response, the nature of ego development itself would seem to indicate that it would be quite *unlikely* that a person whose "true score" on ego development is low would randomly respond to a stem in a fashion indicating high ego development. Given these considerations, all three methods of calculating ego development were considered in the present analyses.

## *Results and Discussion*

### *Correlational analyses*

As an initial exploration of the relationships between personal growth, life satisfaction, and ego development, correlations were computed (see Table 1). Table 1

also reports descriptive statistics and alpha reliabilities. Table 1 also shows the correlation between age and the variables of interest, of which only modal ego development was significantly correlated with age. As expected, the composite of PWB and personal growth were strongly correlated. The PWB composite was also strongly correlated with life satisfaction, but not with any of the three calculations of ego development. Personal growth was moderately correlated with life satisfaction and more weakly correlated with mean and maximum ego development, whereas the correlation of personal growth to modal ego development approached significance ( $r = .14, p < .06$ ). As in past research, the correlations between life satisfaction and ego development were not significant. Because the personal growth subscale demonstrated rather low reliability, correlations with personal growth were corrected for attenuation due to unreliability. The corrected correlations are shown in Table 1.<sup>1</sup>

#### *Unique relationship of personal growth to life satisfaction and ego development*

In order to further explore the unique relationship of personal growth with life satisfaction and ego development, above and beyond the PWB composite, hierarchical regressions were computed. Results are shown in Table 2. In Step 1, ego development was regressed on the PWB composite, excluding personal growth. In Step 2, personal growth was added to the model. Personal growth accounted for a significant increase in  $R^2$  in modal ego development, but not mean or maximum ego development, above and beyond the PWB composite. A similar hierarchical regression was computed for life satisfaction. Personal growth did not account for a significant increase in  $R^2$  in life satisfaction above and beyond the PWB composite.

#### *Differential relationship between personal growth, life satisfaction and ego development*

Significant correlations were observed between personal growth and the two components of maturity. Thus, in order to determine if there was a differential relationship between personal growth and the components of maturity, a series of hierarchical regressions were run. In total, six different models were tested. In Step 1, personal growth was regressed onto a single criterion of maturity. In models 1 through 3, the three calculations of ego development were entered, independently. In models 4 through 6, life satisfaction was entered in Step 1; thus, models 4 through 6 are identical at step 1. In Step 2, the alternative component of maturity, or the component of maturity not added in Step 1, was added to the regression. Thus, for instance, in Step 2 of model 1, life satisfaction was added as a predictor to the regression of personal growth on mean ego development. In Step 2 of model 4, mean ego development was added as a predictor to the regression of personal growth on life satisfaction. Hence, at Step 2, models 1 and 4 are identical. This is the similar case for both models 2 and 5 and models 3 and 6. Thus, the results in Table 3 are simplified to avoid redundancy. Across models 1, 2, and 3, the addition of life satisfaction at Step 2 resulted in a significant  $R^2$  change, demonstrating that life satisfaction uniquely accounted for variance in personal growth, above and beyond the three statistical interpretations of ego development. Results across models 4, 5, and 6, or the three calculations of ego development, were not as congruent. Only maximum ego development accounted for unique variance in personal growth, above and beyond life satisfaction, whereas mean ego development and modal ego development were not significant predictors of variance in personal growth ( $\Delta R^2$ 's < .015,  $p$ 's > .09), above and beyond life satisfaction.

### *Discussion of Study 1*

Study 1 provided an initial exploration of the hypothesized relationship between personal growth and ego development. As in previous research, individuals who reported that they were strongly driven towards personal growth were also likely to report high life satisfaction. Such individuals were also more likely to respond to the SCT stems in ways that were demonstrative of higher ego development. This result was congruent across all three statistical interpretations of ego development. Thus, initially, being high on personal growth appeared to be related to both aspects of maturity. Several hierarchical regressions were used to further explore the relationship of personal growth to the components of maturity. With regard to life satisfaction, personal growth did not provide any unique information over and above the PWB composite. On the other hand, personal growth was a weak to moderate predictor of the three calculations of ego development, although only the relationship with modal ego development was significant. Given that there was some semblance of relationship between personal growth and both components of maturity, the potential differential relationship of personal growth to maturity was explored. The evidence supports a stronger relationship between personal growth and life satisfaction. However, again, knowledge of modal ego development provided some unique insight into one's level of personal growth. It may be that in some manner, those who subjectively report that they are driven to grow, are more likely to evidence a consistent pattern of higher cognitive complexity with which they interpret and experience their lives.

While Study 1 provided an initial exploration of the hypothesized relationships of interest, it was not without limitations. While Study 1 included a community adult

sample, the sample of adults was itself unusual. The sample was predominantly female and consisted of professionals who only worked in health-related fields. Thus, the results of Study 1 lack generalization, although perhaps none less than a study using the typical college student population. Study 1 also had two methodological shortcomings, the measurements of ego development as well as well-being. Study 1 was limited in that a shortened 9-item version of the SCT was utilized. Three statistical calculations of ego development were used as a replacement for the validated total protocol score and results should be interpreted with some caution. Study 2 improves upon this limitation by using a longer, standard version of ego development that has been well validated. Additionally, the results of Study 2 were explored within the 9-items that were used in Study 1, in order to analyze the replicability of Study 1 results and the validity of our interpretation of ego development.

Also of interest, Study 1 only assessed the life satisfaction component of subjective well-being. Given that the positive well-being component of maturity is most often conceptualized as including not only life satisfaction but also a measure of affective balance, Study 1 only partially explored the differential relationship between personal growth and the two aspects of maturity.

Finally, Study 1 was also limited because it was a cross-sectional design. Given that personal growth entails potential change over time and that ego development is representative of personality development over time as well, it is important to assess prospective relationships, which Study 2 addressed.

## *Overview of Study 2*

Study 2 followed a sample of incoming first year students over the course of their first year in the university. Study 2, then, allows for an exploration of both concurrent and prospective relationships. While the sampling diversity of the adult sample is lost, change in ego development is more likely to be observed in the college sample (Loevinger & Wessler, 1970). We predicted that personal growth and ego development would be positively related when measured concurrently. In addition, we explored whether personal growth would predict higher ego development at a later time and whether ego development would predict higher personal growth at a later time. Also in Study 2, both the affective and cognitive components of subjective well-being were assessed, allowing for a fuller exploration of the differential relationship between personal growth and the two aspects of maturity. In terms of concurrent relationships, we predicted that personal growth would relate to both ego development and subjective well-being. We also explored the potential prospective relationships among personal growth, ego development, and subjective well-being.

### *Study 2*

#### *Methods*

##### *Participants*

The sample for Study 2 was comprised of undergraduate students at the University of Missouri-Columbia. Participants were incoming first year students who were recruited by fliers that were posted throughout campus at the beginning of the fall of 2003. Over the course of the following year and a half, participants underwent five waves of assessment. Participants were paid \$20.00 for each wave that they completed. In order

to insure a sufficient number of participants in all waves of data collection, initially packets were distributed to 300 students, out of which 244 were returned (80%). The primary reason for non-completion was the time involved during the hectic transition to college. As expected, participation dropped at each wave. 194 participants completed wave 2 (80% of wave 1), 174 completed wave 3 (90% of wave 2), and 156 completed wave 4 (the last wave prior to the end of the first year of college; 90% of wave 3). Waves 4 and 5 were separated by summer break as well as most of the fall semester of the sophomore year in college. The final wave consisted of 122 participants with complete data from waves 1 and 5, which are from hereon referred to as Time 1 (wave 1) and Time 2 (wave 5). A small number of participants from wave 4 could not be located, indicating that they may have left the university. Thus, although the sample in the final wave represents just 50% of the initial sample, it also represents 78% of the sample at the previous wave. The sample of 122 was predominantly female (82%) and the mean age was 18.2 ( $SD = .52$ ) and ranged from 18 to 21. Participants were 90.2% European American, 2.5% African American, 1.6% Hispanic, 1.6% Asian American, and 4.1% were other.

### *Materials and Procedure*

Time 1 involved a battery of questionnaires assessed with a paper and pencil packet. Participants were given the packet at the beginning of the fall of 2003 semester and told to complete it on their own time and to return it within the following week. The packet took approximately an hour and a half to complete and participants were instructed that they did not have to complete the packet in one sitting. If participants did not return the packet within a week's time they were contacted by phone and given a



reminder. Time 2 involved a similar paper-and-pencil questionnaire packet with similar instructions for completion. Participants were given the Time 2 packet in late November or early December in 2004, more than a year after the initial assessment. Both packets were nearly identical and including all of the following measures.

*Psychological Well-Being.* The PWB scale was assessed as in Study 1.

*Ego Development.* In Study 2 participants completed the 18-item version of the SCT. The 18-item version of the SCT has been shown to retain psychometric properties similar to the full 36-item version (Hy, Bobbitt, & Loevinger, 1998). Once again responses were organized by item and scored by raters who had attained high reliability with expertly scored practice materials (96%). Where disagreements occurred they were resolved by discussion between the raters and a third expert rater. Disagreements of two levels or greater were, again, quite uncommon, as 97% of scores were within one level.

*Subjective Well-Being.* Subjective well-being (SWB) is defined as the amount of positive affect relative to negative affect plus the judgment of life satisfaction (Diener, Suh, Lucas, & Smith, 1999). The life satisfaction component was assessed, as in Study 1, using the SWLS (Diener et al., 1985). Affect balance was assessed with the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Participants responded to the 20 emotion word items of the PANAS by indicating the extent to which they generally feel that way on average, by use of a 5-point scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Positive affect was assessed by 10 words (PA; e.g., ‘excited,’ ‘interested,’ and ‘proud’) while the remaining 10 words assessed negative affect (NA; e.g., ‘distressed,’ ‘nervous,’ and ‘afraid’). The affective component is calculated as a ‘balance’ score, or as the mean of the PA items minus the mean of the NA

items. In turn, SWB is calculated as the sum of the mean of the SWLS and the affective balance.

## *Results and Discussion*

### *Correlational analyses*

Correlations were computed for an initial exploration of the relationships between the PWB composite, personal growth, life satisfaction, and ego development . Table 4 includes descriptive statistics, alpha reliabilities, correlations within time, and correlations across time. Correlations with age were also computed. Only ego development at Time 1 was negatively related to how old individuals were. Within Time 1, the PWB composite was only significantly related with SWB and was (surprisingly) unrelated to personal growth. Personal growth was moderately correlated with ego development but was not related to SWB. As in past research, ego development and SWB were uncorrelated. Within Time 2, the PWB composite was positively related with personal growth, ego development, and SWB. At Time 2, personal growth was significantly related to both aspects of maturity. Again, ego development and SWB were uncorrelated.

Across time, all variables at Time 1 were significantly related to their respective values at Time 2. The PWB composite at Time 1 was related across time to personal growth and SWB (at Time 2). Personal growth at Time 1 was not related to any of the variables, other than itself, at Time 2. Nor was ego development at Time 1 related to any variables at Time 2, other than itself, although the correlation with personal growth at Time 2 approached significance ( $r = .17, p < .06$ ). SWB at Time 1 was strongly related to PWB composite at Time 2 and moderately related to personal growth at Time 2.

### *Dummy coding of ego development for multivariate analyses*

Given the somewhat non-normal distribution of ego development scores, ego development was collapsed into smaller levels, so as to more evenly split the distribution of scores. Scores from 2 to 4 were collapsed into the first level ( $N = 27$ ), scores of 5 represented the second level ( $N = 34$ ), and scores from 6 to 8 were collapsed into the third level ( $N = 61$ ). Two dummy variables were created to represent these three levels of ego development at Time 1, with the first level serving as the comparison group (0,0), the first dummy variable representing the second level (1,0), and the second dummy variable representing the third level (0,1). Ego development at Time 2 was also collapsed into three levels using the same categorizations as at Time 1 (first level  $N = 22$ , second level  $N = 56$ , and third level  $N = 44$ ). The dummy variables at Time 2 were coded identical to those at Time 1. Any interaction terms that were created were computed as the product of the dummy variables and the mean deviation of the other variable.

### *Concurrent multivariate analyses*

First, a series of hierarchical regressions were used to explore the unique relation of personal growth to ego development and SWB, above and beyond the PWB composite. Results are presented in Table 5. All regressions include variables measured concurrently. In Step 1, ego development was regressed on the PWB composite. In Step 2, personal growth was entered into the model. Personal growth accounted for a unique proportion of variance in ego development above and beyond the PWB composite at Time 1. At Time 2, the proportion of variance in ego development accounted for by personal growth, above and beyond the PWB composite, approached significance ( $\Delta R^2 = .025, p < .08$ ). A similar series of regression was computed with SWB as the outcome of

interest. Personal growth did not account for a unique proportion of the variance in SWB, above and beyond the PWB composite, at either Time 1 or Time 2 ( $\Delta R^2$ 's < .002,  $p$ 's > .51).

Secondly, another series of hierarchical regressions was used to explore the differential relationship of personal growth with ego development and SWB. Results are presented in Table 6. Once again, all regressions include variables measured concurrently. In Step 1, personal growth was regressed on a single predictor in two separate models. In model 1, personal growth was regressed on dummy coded ego development. In model 2, personal growth was regressed on SWB. In Step 2, the full model was run, in which personal growth was regressed on both ego development and SWB. At Time 1, the dummy coded ego development variables collectively predicted personal growth above and beyond SWB, given the significant  $R^2$  change from Step 1 model 1 to the full model in Step 2. Specifically, the significant regression coefficient for dummy variable 2 (i.e., reflects the highest group on ego development) indicated that individuals who were higher on ego development at Time 1 were more likely to be higher on personal growth than those who were medium or low on ego development. On the other hand, SWB did not account for a significant proportion of the variance in personal growth, above and beyond ego development. Results differed at Time 2. Dummy coded ego development did not account for unique proportion of variance in personal growth, above and beyond SWB. However, SWB did account for variance in personal growth above and beyond ego development. It might be noted that, although the  $R^2$  change for the step was not significant for the addition of dummy coded ego development, the regression coefficient for dummy variable 2 was significant, indicating that individuals

who were high on ego development were significantly higher on personal growth, in comparison to those who were medium or low on ego development. Results were essentially the same when treating ego development as a continuous predictor variable. At Time 1, ego development predicted personal growth above and beyond SWB, as seen in the significant  $R^2$  change from Step 1 model 1 to the full model in Step 2 ( $\Delta R^2 = .10, p < .001$ ). On the other hand, SWB did not account for a significant proportion of the variance in personal growth ( $\Delta R^2 = .01, p < .30$ ). Results differed at Time 2, as both ego development and SWB contributed uniquely to personal growth above and beyond each other ( $\Delta R^2$ 's  $> .04, p$ 's  $< .02$ ). That is, in the full model, both ego development and SWB were simultaneously significant predictors of personal growth.

These concurrent analyses can be compared with the results of Study 1. The unique relationship of personal growth with ego development and SWB, above and beyond the PWB composite, was explored in both studies. In contrast to Study 1, personal growth did not significantly account for any of the variance in SWB at either time of assessment in Study 2. The importance of personal growth as a predictor of ego development, above and beyond the PWB composite, received mixed results. In Study 1, only modal ego development was predicted by personal growth. In Study 2, ego development was significantly predicted by personal growth at Time 1, but not at Time 2 (although this approached significance). It is worth noting that the results of both studies demonstrated that personal growth was more consistently related to ego development than to SWB.

The differential relationship of ego development and SWB with personal growth was also explored in both studies. In Study 1, life satisfaction remained an important

predictor of personal growth, even when accounting for ego development. On the other hand, it was less clear whether ego development retained an important role in predicting personal growth, when life satisfaction was accounted for. However, in Study 2 the pattern of results that was observed at Time 1 was the exact opposite of the pattern observed at Time 2. This contradiction will be further discussed later.

### *Prospective analyses*

The prospective relationships between personal growth, ego development, and SWB were explored through a third series of hierarchical regressions. Results are presented in Table 7. Only the prediction of Time 2 outcomes from Time 1 variables was explored. When ego development at Time 1 was entered as a predictor, the dummy variables were entered. In step 1, the outcome of interest was regressed on that outcome's value at Time 1. In step 2, three different models were tested, each of which involved the addition of single predictor. Model 1 includes the addition of personal growth, model 2 the addition of ego development, and model 3 the addition of SWB. Note that, for instance, when ego development at Time 2 was the outcome of interest, model 2, in which ego development at Time 1 was to be entered, was not run. In Step 3, all three variables were added simultaneously to the model. With respect to ego development, only ego development at Time 1 accounted for any significant proportion of variance in ego development at Time 2; that is, neither the addition of personal growth or SWB in Step 3 resulted in a significant  $R^2$  change ( $\Delta R^2$ 's  $< .001$ ,  $p$ 's  $> .26$ ). Similarly, the addition of personal growth and dummy coded ego development at Step 3 did not account for unique variance in SWB at Time 2 ( $\Delta R^2$ 's  $< .015$ ,  $p$ 's  $> .79$ ). Thus, for sake of brevity and clarity these results are not presented in Table 7, given that nothing of interest emerged for ego

development and SWB as outcomes. However, there was a significant prospective relationship between SWB at Time 1 and personal growth at Time 2. That is, there was a significant  $R^2$  change from Step 2 Model 2 to Step 3, indicating that SWB accounted for a unique proportion of variance in Time 2 personal growth, above and beyond Time 1 personal growth and dummy coded ego development.

Finally, step 4 involved the addition of the interaction term of dummy coded ego development with SWB to explore whether one's standing on maturity at Time 1 was related to later maturity. For instance, ego development was regressed on dummy coded ego development, SWB, and the two interaction terms of dummy coded ego development and SWB. Again, when ego development and SWB were the outcomes of interest, the addition of the interaction term to the model did not result in a significant  $R^2$  change ( $\Delta R^2$ 's < .02,  $p$ 's > .22). When personal growth at Time 2 was of interest, a different model was tested, as personal growth at Time 2 was regressed on personal growth, ego development, SWB, and the two interaction terms of dummy coded ego development and SWB. The  $R^2$  change between Step 4 and Step 3 tested the importance of the interaction terms, which did not account for any unique variance in personal growth at Time 2.

Study 2 allowed for the investigation of prospective relationships between personal growth, ego development, and SWB. Overall, knowledge of these variables at Time 1 provided very little information about one's standing on these variables at Time 2. Specifically, only knowledge of SWB at Time 1 provided any unique information about one's level of personal growth at Time 2.

*Exploratory analyses: Attempts to replicate Study 1*

In Study 2, ego development was measured with the validated 18 item SCT. This was an improvement upon Study 1, in which only 9 items from the SCT had been administered to participants. Given that the same 9 items were administered to participants in Study 2, as part of the larger 18 item SCT, we explored whether the results of Study 2 within these 9 items were similar to those found in Study 1. As in Study 1, the mean, the mode, and the maximum of the 9 items were considered. Also, life satisfaction, rather than SWB, was analyzed, as in Study 1. For brevity, relationships regarding the PWB composite are not discussed, as they are less important to the main aims of the current research. Correlations were computed between personal growth, mean ego development, modal ego development, maximum ego development, and life satisfaction. Results at Time 1 and Time 2 were fairly consistent with the observed correlations in Study 1, particularly in terms of the relationship between concurrent personal growth and the three calculations of ego development. In Study 2, the relation between personal growth and the three calculations of ego development paralleled those in Study 1. In Study 2, the relationship between modal ego development and personal growth, at both times ( $r$ 's > .18), was significant in this case, whereas it approached significance in Study 1. Further, personal growth was related significantly and more strongly to mean and maximum ego development, as it was in Study 1. Whereas personal growth and life satisfaction were significantly correlated in Study 1, the two were not correlated at either Time 1 or Time 2 of Study 2 ( $r$ 's < .15). Lastly, only one of the six correlations between life satisfaction and the three calculations of ego development in Study 2 (three at both of the two times) differed from Study 1; specifically, at Time 1, maximum ego development



was correlated significantly with life satisfaction ( $r = .19$ ), whereas it was not significant in Study 1.

Next, hierarchical regressions tested the differential relationship of personal growth to ego development and life satisfaction. Regression models paralleled those run to produce the results of Table 3. The results of Study 2 were not consistent with those observed in Study 1. In Study 1, life satisfaction accounted for a significant proportion of variance in personal growth, above and beyond any of the three calculations of ego development. However, at both times in Study 2, life satisfaction did not account for any unique proportion of variance in personal growth, above and beyond any of the three calculations of ego development ( $\Delta R^2$ 's  $< .02$ ,  $p$ 's  $> .10$ ). In Study 1, only maximum ego development accounted for a significant proportion of variance in personal growth, above and beyond life satisfaction. However, in Study 2, five of the six  $R^2$  tests were significant, such that the calculations of ego development accounted for a significant proportion of variance in personal growth above and beyond life satisfaction ( $\Delta R^2$ 's  $> .05$ ,  $p$ 's  $< .01$ ). The sixth  $R^2$  change test, for modal ego development at Time 1, approached significance ( $\Delta R^2 = .03$ ,  $p < .07$ ). Overall, the results of regression analyses for Study 2 do not appear to replicate the observed relationships in Study 1. This contradiction will be further discussed later.

#### *Exploratory analyses: Ego growers vs regressors*

In order to further explore the individuals who changed over the course of the year and a half, participants were divided into one of three groups, based on whether they had increased on ego development (growers,  $N = 32$ ), stayed the same (stable,  $N = 47$ ), or decreased (regressors,  $N = 43$ ). Within-group correlations were run between personal

growth, ego development, and SWB. At Time 1, there was no correlation between personal growth and ego development among those who were stable ( $r = .07$ ), but both growers and regressors were likely to be high on ego development if they reported high personal growth ( $r$ 's  $> .40$ ). Lastly, only among the regressors was personal growth and SWB related ( $r = .38$ ). At Time 2, personal growth was only related to ego development in those who had grown ( $r = .41$ ). Personal growth was only related to SWB among those who were stable ( $r = .43$ ) and those who had regressed ( $r = .34$ ). Across time, more differences across the groups emerged. Personal growth at Time 1 was, surprisingly, not related to personal growth at Time 2 in those who regressed but was significantly related to itself in the other two groups. Further, personal growth at Time 1 was only significantly related to variables at Time 2 within the stable group, as it was related to SWB ( $r = .34$ ). Ego development at Time 1 was, of course, correlated to itself at Time 2 ( $r$ 's  $> .70$ ), but was also related to personal growth at Time 2, but only among those who were growers ( $r = .49$ ). Finally, SWB at Time 1 was related to itself at Time 2, across all groups ( $r$ 's  $> .47$ ). A multivariate analysis of variance (MANOVA) was run to compare growers, those who were stable, and regressors on personal growth and SWB, from Time 1 and Time 2. The multivariate test of differences between groups, using the Wilks Lambda criteria, was not statistically significant ( $F(8,232) = .45, p < .89$ ), nor were any of the univariate  $F$ 's significant.

### General Discussion

The present set of studies was intended as an initial exploration of the relationship between personal growth and the components of maturity, well-being and cognitive complexity. Personal growth has been linked to well-being in previous research (Ryff &

Keyes, 1995), as such, the main aim of the current research was to explore the possibility that personal growth is also related to cognitive complexity (i.e., ego development). The relationship between personal growth, ego development, and well-being was explored in both studies. The second aim of the current research was to explore the prospective relationship among personal growth and the components of maturity over time (Study 2).

Study 1 revealed that personal growth is indeed related to not only life satisfaction, but to ego development as well. However, the results were unclear as to whether there was a differential relationship between personal growth and the two components of maturity. Study 2 also supported the notion that personal growth is related in some manner to not only well-being, but also to ego development. Overall, exploration of the first aim of the research provided some evidence for the existence of a relationship between self-reported personal growth and ego development.

Study 2 also explored the prospective relationship between ego development and well-being. Just as previous research and the current set of studies failed to find any significant relationship between ego development and well-being, when measured concurrently, Study 2 did not find a significant relationship between ego development and well-being across time. Results underscore a long history of research showing the independence of these two facets of maturity. Clearly, individuals can be happy but not ego developed and high on ego development but still unhappy.

It may be possible that individuals who are both high on well-being and high on ego development are more likely to actively seek growth and or may have greater available resources or skills with which to move up the ladder of maturity. Thus, we tested whether or not the interaction of ego development and SWB at Time 1 predicted

greater maturity at Time 2, which it did not. Although like any null results, these could be due to lack of power to detect an effect, given the number of studies examining these variables have shown their lack of relationship, it may be that these facets of maturity are indeed unrelated, concurrently or prospectively. Examining personal growth as the criterion, analyses overtime suggested that while well-being predicted enhanced reports of personal growth over time, ego development did not. The lack of prospective relationships between personal growth and ego development provide no evidence for the notion that conscious attempts at personal growth are related to enhanced ego development overtime. Additionally, ego development itself does not appear to predict, prospectively, the tendency to embrace personal growth. Thus, the results of both studies suggest that concurrent ego development is associated with conscious reports of personal growth, but overtime these variables do not relate in a meaningful way. As such, we might consider personal growth to be like other variables that have been shown to relate to ego development (e.g., compassion, openness to experience, tolerance for ambiguity), but which do not necessarily play a role in accomplishing this developmental end.

*What is the phenomenological feeling of development?*

Given the results of the current set of studies, the question remains, what does the phenomenological feeling of growth and development entail? On the one hand, subjectively reported growth is related to feelings of well-being. Across the lifespan, successful adaptation and adjustment to challenges, to novel environments, and to changes in roles should, presumably, result in positive feelings when one establishes a meaningful place in society, both in terms of career and work, and in terms of social ties with friends and family. That well-being results from such success may never have been

an explicit goal towards which such growth in the face of adjustment and adaptation was directed. In essence, well-being may be the unintentional result of such personal growth. Further, results suggest that individuals who enjoy a modicum of well-being may be more likely to embrace personal growth as a goal. Given that personal growth is considered effortful engagement in self improvement or self-actualization, well-being may provide a platform from which such an effortful work on the self may be palatable. It might be worth noting that one inconsistency between the two studies was the stronger concurrent relationship between life satisfaction and personal growth in Study 1 compared to the less robust relationship between well-being and personal growth in Study 2. One potential explanation for this difference might be the differing ages and life situations of the two samples. College might be considered a time in which it is essentially expected that individuals will embark on a time of personal growth. It is notable that feelings of well-being were associated with enhanced personal growth reports over time. For college students happiness may be a precursor to the experience of growth. For adults (eg., those in Study 1), feelings of life satisfaction may be more strongly related to personal growth since this growth is less a function of normative expectations. Further, individuals who feel themselves actively engaged in the process of personal growth may find this very engagement satisfying.

As noted above, ego development was related to personal growth, in both studies, but only concurrently. Individuals who are characterized by complex, nuanced views of life may well report themselves as embracing personal growth as an important end. However, overtime these two variables are not related. Given that the higher levels of ego development are characterized by concern for identity and interpersonal mutuality

and understanding, these conscious reports of concern for personal growth are perhaps not surprising. Importantly, however, results of the present study do not suggest that such preoccupation with personal growth actually contributes to ego development itself.

Although the notion of the active developer is increasingly of interest for scholars, it is important to note the difference between active development and intentional development (King, in press). By active development, we refer to the process by which an individual exerts effortful engagement towards development. Simply, this might entail the effort of showing up to work each day or spending time with loved ones. Intentional development, though, is a step up from active development in that it calls forth a deliberate and conscious focus on the developmental tasks at hand.

A comparison can be drawn to the topic of meta-communication, which broadly describes situations in which an individual communicates with another individual *about* their communication. In a similar fashion, the intentional developer is talking with him or herself about his or her active development. The intentional developer is, most notably, represented by those who self-report high personal growth. In the case of the current research, those who reported that they are engaged in personal growth were more likely to be highly ego developed. However, over time, just because an individual was either high on personal growth or highly ego developed did not necessarily indicate that growth and development would ensue. Thus, although ego development certainly seems to be related to active engagement in life experience (King, Scollon, Ramsey, & Williams, 2000), the end results of this engagement may well be a capacity that is simply unavailable to conscious report.

### *Limitations and future directions*

The present studies are intriguing but they are also limited. Study 1 utilized a novel procedure to assess ego development. The use of the shortened 9 item SCT presented a methodological hurdle to overcome. However, the use of the three calculations of ego development in Study 1 (i.e., mean, mode, and maximum) was fairly justified. Further, because the 9 items that were used in Study 1 were used within the assessment of ego development in Study 2, we were able to explore whether or not these results replicated in Study 2. The results of Study 2 were somewhat consistent with those observed in Study 1, when using the mean, mode, and maximum of the 9 items. However, the results with the three calculations of ego development did parallel those observed with the total protocol score in Study 2; thus, it is unclear whether the inconsistency in results across studies is due to issues concerning the measurement of ego development, to some underlying difference between the samples of the study, or due to the true nature of the relationships between the variables of interest. Thus, interpretation of results for Study 1 should be taken with caution.

While Study 2 allowed for analysis of prospective relationships between personal growth, ego development, and well-being, these constructs were only measured at two occasions. Three or more waves of assessment are better suited for addressing questions of change and development. Because of the design of Study 2, complex relationships over time between ego development and well-being may have gone undetected in the sample of only two waves. Thus, future explorations of ego development and well-being should take this into account and assess three or more waves.

Based on the characteristics of the current samples for both studies, there is some concern over how generalizability. Certainly, participants in Study 1 were predominantly female and although it was a community sample, the participants were drawn from a single professional field. The sample of first year college students was desirable, given that such students were expected to be more likely to change on ego development. However, previous research that has tracked changes in ego development, such as research on parents of children with Down Syndrome or women who have experienced divorce, has focused on older adults. It may be that certain life experiences, which most college students have yet to experience, result in changes that would create notable, prospective relationships between ego development and well-being.

In a related fashion, personal growth was initially conceptualized as process that occurs in light of specific identity challenging experiences *and* as an engaged, active process. In the current set of studies, personal growth was only assessed as this latter active process. Future research should investigate the relationships between self-reported growth, in light of dealing with an identity challenging experience, ego development, and well-being.

### Conclusion

In sum, the current set of studies provided an initial exploration of the relation of the phenomenological feelings of growing to actual personality development. Personal growth was, indeed, found to be related to ego development. As in previous research, personal growth was also related to well-being. Although personal growth was found to relate to both of the components of maturity, no prospective relations emerged for ego development. Furthermore, the relationships between personal growth and well-being



were not consistent across studies. Clearly, future research should continue to address the relations among the phenomenological experience of personal growth and a variety of measures of maturity. Such research might help to capture the developmental outcomes that might be influenced by the developer's active and potentially intentional engagement in the process of personal growth.

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## Footnote

1. Mean differences and correlations were explored within the two sample populations from which the community samples were drawn, that is, within the states of Washington and Texas. T-tests were used to demonstrate that mean scores on the PWB composite, personal growth, SWLS, modal ego development, and maximum ego development did not differ across the samples ( $t(174)$ 's  $< 1.31$ ,  $p$ 's  $> .19$ ). However, mean ego development was greater in the Washington sample (5.71,  $SD = .61$ ) than in the Texas sample (5.51,  $SD = .60$ ;  $t(174) = 2.26$ ,  $p < .03$ ). Correlations between the PWB composite, personal growth, and life satisfaction were similar across the two samples. Also, correlations between the three methods of calculation of ego development were similar across the two samples. However, correlations of ego development with personal growth and life satisfaction differed across samples. In the Washington sample, personal growth was significantly correlated with all three methods of calculated ego development ( $r$ 's  $> .22$ ), whereas the same correlations were not significant in the Texas sample ( $r$ 's  $< .13$ ). In the Washington sample, life satisfaction and ego development, both mean and modal, were significantly correlated ( $r$ 's  $> .27$ ) and the correlation with maximum ego development approached significance ( $r = .22$ ,  $p < .055$ ). Alternatively, in the Texas sample, life satisfaction and all three methods of ego development calculation were uncorrelated ( $r$ 's  $< .02$ ).

Table 1.  
*Descriptive statistics, reliabilities, and correlations between age, PWB, life satisfaction, and ego development in Study 1*

	Ego Development					Mean	SD		
	PWB Composite	Personal Growth	Personal Growth*	Life Satisfaction	Mean			Mode	Maximum
Age	.03	.13	-	.01	.08	<b>.16</b>	.00	-	-
PWB Composite	(.76)	<b>.53</b>	.99	<b>.59</b>	.10	.02	.13	3.90	.48
Personal Growth		(.37)	-	<b>.34</b>	<b>.17</b>	.14	<b>.17</b>	4.39	.61
Personal Growth*			-	.60	.32	-	-	-	-
Life Satisfaction				(.86)	.14	.10	.10	3.65	.85
Ego Development									
Mean					(.74)	<b>.77</b>	<b>.73</b>	5.60	.61
Mode						-	<b>.48</b>	5.78	.79
Maximum							-	6.89	.74

Note. N = 176. Reliabilities are on the diagonal. Correlations in bold are significant at  $p < .05$ . PWB composite is the aggregated score of the components of the PWB scale, excluding Personal Growth. Personal Growth\* = Correlations corrected for attenuation.

Table 2.  
*Standardized Beta coefficients and R<sup>2</sup> values from hierarchical regressions predicting ego development and life satisfaction as a function of PWB in Study 1*

	Ego Development			Life
	Mean	Mode	Max	Satisfaction
Step 1				
Step 1 R <sup>2</sup>	.01	.00	.02	.35
Step 2				
PWB Composite	.02	-.09	.06	<b>.57</b>
Personal Growth	.16	<b>.20</b>	.15	.04
Step 2 R <sup>2</sup>	.03	.03	.03	.35
ΔR <sup>2</sup>	.02	<b>.03</b>	.02	.00

Note. N = 176. Statistics in bold are significant at  $p < .05$ . PWB composite is the aggregated score of the components of the PWB scale, excluding Personal Growth.



Table 3.  
*Standardized Beta coefficients and R<sup>2</sup> values from hierarchical regressions predicting personal growth as a function of ego development and life satisfaction in Study 1*

	$\beta$	Model R <sup>2</sup>	$\Delta R^2$
Step 1			
Model 1		<b>.029</b>	
Mean Ego Development			
Model 2		<b>.021</b>	
Modal Ego Development			
Model 3		<b>.031</b>	
Maximum Ego Development			
Models 4-6		<b>.114</b>	
Life Satisfaction			
Step 2			
Model 1,4		<b>.129</b>	
Life Satisfaction	<b>.32</b>		
Mean Ego Development	.12		
<i>Model 1 <math>\Delta R^2</math> between Step 1 and Step 2</i>			<b>.100</b>
<i>Model 4 <math>\Delta R^2</math> between Step 1 and Step 2</i>			.015
Model 2,5		<b>.126</b>	
Life Satisfaction	<b>.33</b>		
Modal Ego Development	.11		
<i>Model 2 <math>\Delta R^2</math> between Step 1 and Step 2</i>			<b>.105</b>
<i>Model 5 <math>\Delta R^2</math> between Step 1 and Step 2</i>			.012
Model 3,6		<b>.134</b>	
Life Satisfaction	<b>.32</b>		
Maximum Ego Development	<b>.14</b>		
<i>Model 3 <math>\Delta R^2</math> between Step 1 and Step 2</i>			<b>.103</b>
<i>Model 6 <math>\Delta R^2</math> between Step 1 and Step 2</i>			<b>.020</b>

*Note.* N = 176. Statistics in bold are significant at  $p < .05$ . Models 4-6 are identical in Step 1. In Step 2, the addition of Life Satisfaction to Model 1 and the addition of Mean Ego Development to Model 4 result in identical models at the Step 2 stage. Models 2 and 5 and Models 3 and 6 are also identical at Step 2.

Table 4.  
Descriptive statistics, reliabilities, and correlations within Time 1, within Time 2, and across time in Study 2

	Within Time					Across Time				
	Age	PWB Composite	Personal Growth	Ego Development	SWB	PWB Composite	Personal Growth	Ego Development	SWB	
Age	-									
PWB Composite	-.02	-								
Personal Growth	.05	<b>.39</b>	-							
Ego Development	.03	<b>.18</b>	<b>.22</b>	-						
SWB	-.15	<b>.79</b>	<b>.29</b>	.07	-					
$\bar{M}$	59.25	13.16	5.32	5.32	0.00					
SD	5.44	1.58	1.16	1.16	2.25					
$\alpha$	.64	.50	-	-	.81					
$\bar{M}$	59.41	13.12	5.21	5.21	0.00					
SD	6.16	1.52	0.93	0.93	1.88					
$\alpha$	.75	.48	-	-	.87					

Note. N = 121-122. Correlations in bold are significant at  $p < .05$ . Correlations within Time 1 are above the diagonal, correlations within Time 2 are below the diagonal. Correlations across time are represented by Time 1 on the vertical axis and Time 2 on the horizontal axis. PWB composite is the aggregated score of the components of the PWB scale, excluding Personal Growth. SWB = Subjective Well-Being

Table 5.  
Standardized Beta coefficients and  $R^2$  values from hierarchical regressions predicting ego development and SWB as a function of PWB in Study 2

	Time 1		Time 2	
	Ego Development	SWB	Ego Development	SWB
Step 1				
Step 1 $R^2$	<b>.00</b>	<b>.34</b>	<b>.03</b>	<b>.63</b>
Step 2				
PWB Composite	-.01	.58	.11	.80
Personal Growth	<b>.33</b>	.05	.17	-.02
Step 2 $R^2$	.11	<b>.35</b>	.06	<b>.63</b>
$\Delta R^2$	<b>.11</b>	.00	.03	.00

Note.  $N = 121-122$ . Statistics in bold are significant at  $p < .05$ . Variables entered as predictors are measured concurrently with the outcome variable. PWB composite is the aggregated score of the components of the PWB scale, excluding Personal Growth. SWB = Subjective Well-Being

Table 6.  
Standardized Beta coefficients and  $R^2$  values from hierarchical regressions predicting personal growth as a function of dummy coded ego development and SWB in Study 2

	Personal Growth					
	Time 1			Time 2		
	$\beta$	Model $R^2$	$\Delta R^2$	$\beta$	Model $R^2$	$\Delta R^2$
Step 1						
Model 1		<b>.05</b>			.04	
	Ego Development					
	Dummy 1					
	Dummy 2					
Model 2		.01			<b>.08</b>	
	SWB					
Step 2						
Model 1,2		<b>.06</b>	<b>.05</b>		<b>.11</b>	.03
	Ego Development					
	Dummy 1	.07		.12		
	Dummy 2	<b>.26</b>		<b>.23</b>		
	SWB	.10	.01	<b>.26</b>		<b>.07</b>

Note. N = 121-122. Statistics in bold are significant at  $p < .05$ . SWB = Subjective Well-Being. Low ego development is the group of comparison (0,0), middle ego development is represented by dummy 1 (1,0), and high ego development is represented by dummy 2 (0,1).

Table 7.  
*Standardized Beta coefficients and R<sup>2</sup> values from hierarchical regressions predicting Time 2 personal growth as a function of Time 1 personal growth, dummy coded ego development, and SWB in Study 2*

		Personal Growth		
		$\beta$	Model R <sup>2</sup>	$\Delta R^2$
Step 1	Personal Growth		<b>.145</b>	
Step 2	Model 2		<b>.145</b>	
	Personal Growth			
	Ego Development			.000
	Dummy 1			
	Dummy 2			
	Model 3		<b>.181</b>	
	Personal Growth			
	SWB			<b>.036</b>
Step 3	Full Model		<b>.181</b>	
	Personal Growth	<b>.36</b>		
	Ego Development			.000
	Dummy 1	.00		
	Dummy 2	.00		
	SWB	<b>.19</b>		<b>.036</b>
Step 4	Personal Growth	<b>.36</b>	<b>.182</b>	
	Ego Development			
	Dummy 1	.00		
	Dummy 2	.00		
	SWB	.11		
	Interaction Terms:			.001
	Dummy 1 x SWB	.05		
	Dummy 2 x SWB	.08		

*Note.* N = 121-122. Statistics in bold are significant at  $p < .05$ . All predictor variables were measured at Time 1. SWB = Subjective Well-Being. Low ego development is the group of comparison (0,0), middle ego development is represented by dummy 1 (1,0), and high ego development is represented by dummy 2 (0,1).