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Understanding inter-individual variability in purpose in life: Longitudinal findings from the VA Normative Aging Study

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Abstract

Research has demonstrated the importance of having a purpose in older adulthood; however, little is known about whether and how individuals vary on sense of purpose over time. The current study examined patterns of mean- and individual-level change in purpose among men in the Veterans Affairs Normative Aging Study ($n = 587$; $M_{\text{age}} = 74$ years) across a three-year span. Findings demonstrate that while little mean-level change was present, there was inter-individual variability in change. Further research is needed to understand why these changes occur, as age, health status, and personality failed to predict individual fluctuations in purpose.

The benefits of perceiving and living a life directed toward a broader purpose are widespread. Having a purpose in life provides individuals with a sense of direction and goals for the future (Ryff, 1989; 2014), as well as a marker of eudemonia and a life well-lived (Ryff & Singer, 2008), and the construct of purpose can viewed similarly to a lighthouse or compass (Hill, Sumner, & Burrow, 2013; McKnight & Kashdan, 2012). An accruing literature suggests these benefits might help ameliorate the health and deterioration concerns associated with old age. Purposeful adults tend to outlive their peers (Boyle, Barnes, Buchman, & Bennett, 2009; Hill & Turiano, 2014; Krause, 2009), and experience a diminished risk for both cognitive decline (Boyle, Buchman, Barnes, & Bennett, 2010) and disability (Boyle, Buchman, & Bennett, 2010) in older adulthood. Moreover, having a purpose in life appears to lead to unique health benefits relative to other aspects of psychological well-being, such as having positive relations with others (e.g., Hill & Turiano, 2014). As such, the value of having a sense of purpose is largely unquestioned, but researchers are left with multiple questions regarding whether and for whom individual-level changes in purpose in life occur, particularly later in life when social roles decrease and health concerns become paramount.

Most research on purpose in life has been cross-sectional, and often presents a somewhat pessimistic appraisal of how purposeful individuals might feel in the older adult years. Indeed, meta-analytic work suggests that older adults report lower levels of purpose relative to younger adults (Pinquart, 2002), perhaps due to a decreased sense of direction following loss of work and relationship roles in later life. Moreover, it is likely that individuals facing health constraints and concerns are likely to not only feel less purposeful, but also perhaps decline in their sense of direction and belief they can still achieve their goals. However, little is known about within-person change on purpose in life, or whether certain individuals are more prone to experience it.

Support for studying patterns of change in purpose comes from work showing that changes in goal commitment, a central aspect of sense of purpose, predict important adult outcomes. For instance, research suggests that participants with higher initial levels as well as more positive changes on pro-social or occupational goal commitments over time tend to experience greater well-being following the transition to adulthood (Hill, Jackson, Roberts, Brandenberger, & Lapsley, 2011). In other words, individuals who increase their commitment to goals for life, particularly those presumably beneficial for success in adulthood, tend to fare better during this developmental transition. Moreover, evidence for individual-level change (instead of focusing solely on mean-level) can help inform potential intervention work, as well as provide an understanding of whether any change should be expected in the first place. In the current study, we focused on this question of intra-individual change, to establish whether individuals are “doomed” to diminished purposefulness in older adulthood, or if some older adults buck the trends suggested by past cross-sectional work. Lifespan developmental theory predicts such inter-individual variation in within-person, or intra-individual change (Baltes, 1987); in other words, not everyone follows the same trajectory through life, and the existence of individual differences in trajectories is a bedrock principle of lifespan development.

We considered several factors that might influence whether older adults feel a sense of purpose to their lives. For instance, research suggests the potential value in studying personality traits as predictors of level and change in purpose in life. Cross-sectional investigations have found that purposeful individuals report a more adaptive profile across the Big Five traits (e.g., Hill & Burrow, 2012; Schmutte & Ryff, 1997). In other words, purpose in life scores have been linked to greater extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience. This literature has been inconsistent with respect to which trait is most associated with purpose, and it may depend on the sample and measurement technique. For instance, one study found the strongest correlate of purpose was conscientiousness among emerging adults (Hill & Burrow, 2012). However, in a sample of middle aged adults, Schmutte and Ryff (1997) suggested that conscientiousness and neuroticism were roughly similar predictors when examining self-rated purpose, though extraversion plays a more prominent role with considering observer-reports of purpose and controlling for the effects of general positive and negative emotionality. That said, little work has attempted to directly examine which trait is the strongest predictor of purpose in life.

One possibility is that individuals higher on these traits are more predisposed to finding a sense of purpose in life. For example, conscientious individuals are prone to strive toward achievements and be more orderly and organized (see e.g., Roberts, Chernyshenko, Stark, & Goldberg, 2005), and thus may be more successful in their pursuit of long-term goals and aims. These dispositional characteristics may play an even greater role with regard to purposefulness in older adulthood, given the greater need to compensate for diminished abilities (Baltes, 1997), and thus use one's resources (i.e., time and energy) more efficiently. In addition, when considering openness to experience, research points to the role for the trait's facet of creativity in promoting healthy aging (Turiano, Spiro, & Mroczek, 2012), perhaps in part because creative output in older adulthood appears to promote a sense of purpose and psychological well-being (Fisher & Specht, 1999; Flood & Phillips, 2007). Furthermore, given the importance of maintaining close social ties for well-being in older adulthood (Carstensen, Isaacowitz, & Charles, 1999), individuals who are more extraverted, agreeable, and emotionally stable (less neurotic) should be more likely to fulfill this primary direction and goal of older adults, and thus potentially increase (or at least avoid decreases) on sense of purpose. In support, work with individuals in middle adulthood finds that increases on each of the Big Five traits appear associated with increases in purpose in life during a ten-year span (Hounkpatin, Wood, Boyce, & Dunn, 2014). Though promising, when considering the potential for interventions, there is a need for understanding whether meaningful individual-level change can occur during a shorter period of time (less than a decade), as well as during older adulthood.

The present study addressed three important points using data on purpose in life across two measurement occasions in older adulthood. First, we examined whether both mean-level and individual-level change in purpose in life were evident among older men, across a three-year span between assessments. Second, we examined whether initial levels of purpose could be predicted by initial standing on the Big Five traits, age, or health status. Third, we employed these variables to predict intra-individual variability in change patterns with respect to purpose in life. In so doing, the current work provides an initial effort to understand which older men might be more likely to report a stronger sense of purpose, as well as whether we can identify which men are at greater risk for diminished purposefulness over time.

Method

Participants and procedure

Data came from men participating in the Department of Veterans Affairs Normative Aging Study (NAS; details provided in Bossé, Ekerdt, & Silbert, 1984). Starting with a sample of initially healthy men recruited from 1961 to 1970, the current study included participants who completed the psychological well-being scales (Ryff, 1989; Ryff & Keyes, 1995) during the 2003 and 2006 mail surveys. At Wave 1, 587 men completed the purpose in life measure, while 386 completed it again at Wave 2. Men who completed both waves were aged 58 to 89 years, with a mean age of 74.1 ($SD = 6.2$) at the first measurement occasion. Most of the sample were retired (73.7%) and married (81.5%) at the 2003 assessment.

Measures

Purpose in life—At both occasions, men completed a five-item measure of purpose in life as part of the Psychological Well-being Scales (Ryff, 1989; Ryff & Keyes, 1995), rating their agreement to each item from 0 (*Strongly Disagree*) to 4 (*Strongly Agree*). Reliabilities were strong at both waves (2003 $\alpha = .73$; 2006 $\alpha = .75$; sample item: “Some people wander aimlessly through life, but I am not one of them”). Purpose in life scores were positively correlated across waves, $r = .65, p < .05$, demonstrating strong rank-order consistency. Scale means and standard deviations were remarkably similar across time ($M_{2003} = 2.86, SD_{2003} = 0.51$; $M_{2006} = 2.84, SD_{2006} = 0.54$).

Personality traits—In 2003, men completed a bipolar adjectival measure of the Big Five created by Goldberg (1992). For each Big Five trait, they rated themselves on a nine-point scale for seven different items. Reliabilities were strong for all traits: extraversion ($\alpha = .88$; sample item: “introverted-extraverted”), agreeableness ($\alpha = .90$; sample item: “cold-warm”), conscientiousness ($\alpha = .90$; sample item: “disorganized-organized”), emotional stability ($\alpha = .88$; sample item: “angry-calm”), openness ($\alpha = .92$; sample item: “uninquisitive-curious”).

Health Concerns—In 2003, participants also were asked whether they had any health problems bothering them currently. Participants responded either yes or no to the question, and were not prompted with respect to the type of problem being experienced. Only 38% of the sample responded that they did.

Plan of Analysis

The primary analyses of interest employed a latent change model for analyzing level and change in purpose. In these models, all five purpose in life items loaded onto latent constructs for purpose at each time point, with factor loadings and item intercepts fixed across measurement occasions. Models were fit using MPlus 7.1 (Muthén & Muthén, 1998-2012), and missing data were handled by full information maximum likelihood estimation. Attrition analyses suggested that, at Wave 1, men who completed the purpose measure at both waves scored higher on initial levels of extraversion ($d = .30$), conscientiousness ($d = .17$), and purpose ($d = .16$), tended to be younger ($d = .31$), and reported fewer health problems, $\chi^2(1) = 12.31, p < .05$. A linear change model was fit, allowing both 2003 and 2006 constructs to load onto the initial intercept (or level) and then the 2006 latent construct was fit to a loading of 1 on the slope parameter; residual variances for the items were allowed to correlate over time. In the models, the mean for the intercept factor for purpose was fixed at 0 to facilitate interpretability of the change parameter mean. The models fit here are similar in nature to those employed in recent investigations of personality change over time (e.g., Specht, Egloff, & Schmulke, 2011; Takahashi, Edmonds, Jackson, & Roberts, 2013).

Results

First, we examine mean- and individual-level change in purpose by fitting the latent change model described above. This model, allowing a correlation between level and change, fit the

data well, $\chi^2(42) = 85.13, p < .05$, RMSEA = 0.04, CFI = 0.97, TLI = 0.97. Over the three-year span, the sample mean-level change in purpose was not significant, est. = -0.022 (s.e. = 0.021), $p > .05$. However, significant variance was evident with respect to the change parameter, est. = 0.086 (s.e. = 0.016), $p < .05$. In other words, although the sample as a whole showed no change, men varied in their extent of change over time. To illustrate these trends further, about 14% of the sample declined in purpose more than one standard deviation from Wave 1 to Wave 2, while roughly 9% increased in purpose by more than one standard deviation. As typical in these models, initial levels of purpose were negatively related to change ($r = -.20, p < .05$), though this relation is modest enough to suggest that ceiling effects were not a significant issue.

Next, we fit a second latent change model that allowed age, current health problems, and the Big Five traits at Wave 1 to correlate with initial level of purpose, and to predict the evidenced variability in the change parameter. Personality traits were added as manifest mean scores, as modeling all traits simultaneously as latent variables would increase the number of estimated parameters beyond the point of having a suitable participant-to-parameter ratio in this sample. Model fit indices were still strong in this more comprehensive model, $\chi^2(98) = 157.52$, RMSEA = 0.03, CFI = 0.96, TLI = 0.95. Table 1 presents the results for the different model variables with respect to initial correlations with and longitudinal prediction of change in purpose. First, replicating past research, initial levels of purpose correlated negatively with age, but positively with self-reported health, extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience.

To better characterize purpose in life during older adulthood, we estimated a similar model only now requiring all variables to predict rather than correlate with initial levels. This allowed us to investigate the strongest predictors of purpose levels in the current sample. When all variables were included simultaneously, age ($\beta = -.10, t = -2.25$) remained a significant predictor but not lack of health problems ($\beta = .07, t = 1.53$). Among the personality traits, only extraversion ($\beta = .37, t = 6.56$) and openness to experience ($\beta = .19, t = 2.80$) were unique predictors (all other t 's $< 1.72, p$'s $> .05$)¹.

As shown in Table 1, however, none of these included correlates were significant unique predictors of change in purpose: age ($\beta = -.02$), health ($\beta = .01$), extraversion ($\beta = -.14$), agreeableness ($\beta = .13$), conscientiousness ($\beta = -.01$), emotional stability ($\beta = -.05$), openness ($\beta = .04$). The overall model accounted for less than 2% of the variance in purpose change over time ($R^2 = .016, s.e. = .021, p > .05$). While each of the examined predictors correlated with initial levels of purpose, none could help identify which older men were more likely to change in purpose over time.

¹In addition, given the possibility that personality traits may differentially predict purpose across the lifespan, multiple regressions were performed to examine whether the Big Five personality traits interacted with age to predict purpose levels in 2003. Separate regressions were performed for each trait, with interaction terms formed from multiplying the standardized scores for age and those for each trait. None of these moderation effects reached significance, all t 's $< 1.86, p$'s $> .08$. Additional research though is needed to investigate these age interactions further with a broader age range and larger sample size.

Discussion

The current study provides one of the first examinations of whether and for whom a sense of purpose might vary during later adulthood. Focusing on this developmental period is particularly important given that older adults often are confronted with potential declines in physical and cognitive functioning, issues that might be attenuated by purposefulness (Boyle et al., 2010a; Boyle et al., 2010b; Hill & Turiano, in press). To this point, most research on purpose has examined only cross-sectional trends on the variable, with few longitudinal investigations conducted among older adults. Therefore, the current study focused on understanding the potential for individual-level change to occur with respect to one's sense of purpose in later life.

Three findings are of particular importance. First, some men changed in their sense of purpose in life even during a relatively short timeframe. However, there were inter-individual differences in intra-individual change (Baltes, 1987); some men increased or decreased considerably, but most did not change appreciably. In addition to promoting the possibility for purpose interventions among older adults, this finding also speaks to the need for research to consider purpose in life from a lifespan developmental lens, rather than as a static marker of well-being. Second, in line with previous work (e.g., Pinquart, 2002), the current study demonstrated a negative correlation between level of purpose and age. However, it appears not all individuals are destined to decrease in purposefulness. Instead, our sample evidenced relatively strong mean-level stability in the construct across the two waves. As such, age effects in purpose may reflect a longer process, linked more to broader changes in adult roles or social and familial connections. Third, extraversion and openness to experience appear particularly informative for predicting which older adults are more likely to feel purposeful. However, none of the variables under investigation helps us identify which older adults were more likely to increase or decrease their levels of purpose.

The present findings point to potential for enhancing a sense of purpose among individuals even relatively later in the life course. Moreover, it does not appear as though certain “personalities” are more or less likely to increase their levels of purpose over time, though this finding requires additional replication with larger samples and longer timeframes before making any strong suggestions. In addition, it is valuable to consider the potential for purpose interventions to promote personality changes. Indeed, previous work found that adults who increased on purpose in life tended also to increase on all Big Five traits in adaptive directions (e.g., more conscientious, agreeable, etc.; Hounkpatin et al., 2014). Similarly, previous work has shown that changes in subjective and social well-being coincide with those on personality traits (e.g., Hill, Turiano, Mroczek, & Roberts, 2011; Soto, 2014). Future research should examine the potential for interventions to motivate fluctuations with respect both to a sense of purposefulness and personality traits more broadly. In addition, it would be of interest to examine the role of specific life experiences (e.g., changes to family or romantic structures) on one's sense of purpose in life. Such research would be particularly valuable given the recent evidence that positive and negative life events can predict changes on personality over time (e.g., Jeronimus, Riese, Sanderman, & Ormel, 2014), and thus similar effects may be evidenced for a sense of purpose in life.

With respect to the cross-sectional findings, it is worth noting that the current study replicated previous research in demonstrating relations between scores on purpose in life and all Big Five dimensions (see e.g., Hill & Burrow, 2012; Schmutte & Ryff, 1997). Moreover, extraversion appears to hold a particularly robust relationship with purpose, insofar that it retains predictive value even when controlling for other known correlates. Such findings may be expected given recent theorizing that suggests having a purpose is associated with more positive relations with others (e.g., Ryff, 1989; Ryff & Keyes, 1995), even from outside one's in-group (Burrow, Maclen, Sumner, & Hill, in press), and the pursuit of purpose may entail acting "beyond the self" (see e.g., Damon, 2008; Quinn, 2014). As such, one may anticipate a strong relationship between purpose and extraversion, particularly during a developmental period when people tend to emphasize strong ties to social partners (Carstensen, Isaacowitz, & Charles, 1999), and thus purposefulness may be promoted through greater sociality.

However, unlike the past correlational findings with emerging (Hill & Burrow, 2012) or middle adults (Schmutte & Ryff, 1997), our findings point also to a close connection between purpose and openness to experience, a trait more frequently associated with personal growth than purposefulness. That said, openness could play an important role for older adults trying to maintain a sense of purpose, as these individuals may be "required" to explore and seek out new experiences and opportunities in which to feel purposeful, following retirement from the work roles that previously provided this opportunity. Alternatively, it is worth noting that our measure of openness assessed several elements of trait intellect, using adjectives such as "intelligent" and "analytical." Given that middle and older adulthood can often be a period of general cognitive decline (e.g., Salthouse, 2004, 2009), it is possible that openness may become an important predictor of purpose during these developmental periods, as individuals may fall prey to purposelessness if they fail to maintain (or perceive) the levels of cognitive functioning necessary to enact their long-term goals and objectives.

Though valuable on multiple fronts for understanding purpose in later life, the current study is not without its limitations. First, our sample is limited insofar that it only included men and is more than 90% White. Future investigations should investigate whether these findings are influenced by gender or ethnic differences. Second, it will be valuable to follow these men further through time, to better chart the progression of purpose into the future using more than two assessment occasions. Third, though we focused on some of the more likely predictors, additional research should examine other potential variables that might influence trends in purposefulness later in life. Moreover, future research should employ more specified and complex measures of health status, in order to gain a better understanding of which facets or aspects of health are most related to purpose in life. Finally, all measures were self-reported in nature, and thus subject to potential biases. Though some work has investigated observer-reports of purpose in life (Schmutte & Ryff, 1997), future research is needed on this front in order to reduce potential self-reported biases in the measurement of this construct. These caveats aside, the current findings provide valuable advances with respect both to understanding how purpose in life changes during older adulthood, as well as which older adults are more likely to feel a sense of purpose to their lives.

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