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On the quality of adjustment to retirement: The longitudinal role of personality traits and generativity

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Abstract

Objective—Although psychological factors have been explored in relation to other life transitions, their influence on retirement adjustment quality has been largely overlooked. This study assessed the contribution of personality traits and generativity before retirement in the prediction of hedonic and eudaimonic wellbeing at two temporal points after retirement.

Method—This article analyses data from the MIDUS (Midlife in the United States) longitudinal sample. Specifically, it uses a sub-sample of people who were not retired at Time 1, but were 9 years after at Time 2 ($n=548$) and 18 years after at Time 3 ($n=351$).

Results—After controlling both for initial values on hedonic and eudaimonic wellbeing and for the effects of personal attributes and resources, higher scores on extraversion at Time 1 significantly predicted hedonic wellbeing at Time 2 while lower scores on neuroticism and higher scores on generativity at Time 1 significantly predicted eudaimonic wellbeing at Time 2. Neuroticism and generative concern at Time 1 remained significant in the prediction of eudaimonic wellbeing at Time 3.

Conclusions—The study shows that personality traits and generative concern at midlife explain a meaningful part of the variation in individuals' quality of subsequent retirement adjustment.

Keywords

personality traits; generativity; hedonic wellbeing; eudaimonic wellbeing; retirement adjustment; longitudinal studies

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Introduction

Throughout their lifespan, individuals experience many life changes that require adjustment and adaptation. Among them, retirement is one of the most important life transitions in late adulthood. Retirement has the potential to challenge one's social roles, relationships, routines, and assumptions (Schlossberg, 2011). The rapid rise in the number of retirees in Western countries, as well as their increasing longevity, have increased the interest in understanding the factors that are associated with a more positive or negative adjustment to retirement. As a consequence, research in this area has gained momentum in recent years (for a review see van Solinge, 2013).

Retirement is heterogeneously experienced (e.g. Wang, 2007), with the impact of leaving the work-force showing significant variation across individuals. Researchers have identified a range of factors associated with what is called 'retirement adjustment quality' (Wang, Henkens, & van Solinge, 2011) or 'satisfaction with retirement' (van Solinge & Henkens, 2008), defined as "... the extent to which retirees are psychologically comfortable with the changed circumstances of life in retirement" (Wang et al., 2011, p. 208). Personal attributes and resources, in particular, are significant predictors of retirement adjustment quality (e.g. Kubicek, Korunka, Raymo, & Hoonakker, 2011). Personal resources are assets (material, social, or psychological) that individuals can use to cope with the retirement experience, and their availability has therefore a strong influence on the quality of retirement adjustment (van Solinge, 2013).

Although personal attributes and resources such as age, gender, health, education or income have received considerable attention in previous studies (e.g. Kubicek et al., 2011; Pinquart & Schindler, 2007; van Solinge, 2013; van Solinge & Henkens, 2008; Wang, 2007), psychological factors such as personality variables and dispositional traits have been largely overlooked in retirement research (van Solinge, 2013, 2016; Wang et al., 2011). This is surprising, since psychological factors are important individual resources that have shown a strong influence on the quality of individuals' adjustment to other life transitions and processes (Wang et al., 2011).

In view of the minimal literature on this topic, the central question of this study is: do psychological variables such as personality traits and generativity concerns and motives predict better retirement adjustment quality over and above the effects of personal attributes and resources?

The role of personality traits

As mentioned earlier, personality traits have been associated with people's quality of adjustment to different life transitions, such as marriage (Kelly & Conley, 1987), parenthood (Levy-Shiff, 1994), divorce (Kurdek, 1993), community relocation (Kling, Ryff, Love, & Essex, 2003), expatriation (Wang & Takeuchi, 2007), or career choice (Page, Bruch, & Haase, 2008). As a life transition which usually involves dealing with stress (Yeung, 2013), retirement might also arouse heterogeneous reactions according to personality characteristics. Indeed, factors such as high self-esteem (Reitzes & Mutran, 2004), personal

sense of mastery (Donaldson, Earl, & Muratore, 2010; Price & Balaswamy, 2009), or internal locus of control (Gall, Evans, & Howard, 1997) have been linked to a better quality of retirement adjustment. However, although some studies have explored the links between personality traits and retirement timing (Blekesaune & Skirbekk, 2012) and retirement anxiety (Gana et al., 2009) or the longitudinal changes in personality traits in response to retirement (Lockenhoff, Terracciano, & Costa Jr., 2009), research into the impact of personality traits on retirement adjustment quality has been very limited (Robinson, Demetre, & Corney, 2010).

In this paper, we adopt the well replicated Big Five model (McCrae & Costa, 1990) -which describes adult personality using five dimensions: neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience- to test the contribution of these traits in the prediction of hedonic and eudaimonic wellbeing levels after retirement. The links between personality traits and retirement adjustment quality are likely to replicate the results of research associating low neuroticism and high extraversion with higher levels of life satisfaction (DeNeve & Cooper, 1998; Steel, Schmidt, & Shultz, 2008), and psychological wellbeing (Anglim & Grant, 2016; Grant, Langan-Fox, & Anglim, 2009; Sun, Kaufman, & Smillie, 2016). Neuroticism and extraversion are associated with enduring affective dispositions that account for the effect of these traits on life satisfaction and psychological wellbeing (McCrae & Costa, 1990), and are likely therefore to affect retirement adjustment quality as well.

Individuals high in neuroticism tend to experience negative emotions and maladaptive behavior across many situations, including retirement, which may contribute to lower levels of retirement adjustment quality (H1 & H2; Lockenhoff et al., 2009; Reis & Gold, 1993; Robinson et al., 2010). Conversely, individuals high in extraversion are prone to be active, effective, and socially involved, all factors that may enhance the quality of their post-retirement adjustment (H3 & H4; Lockenhoff et al., 2009; Reis & Gold, 1993; Robinson et al., 2010).

Although the links of agreeableness, conscientiousness, and openness to experience with retirement adjustment quality are somewhat more difficult to establish, Reis and Gold's (1993) theoretical model positively associated them to the quality of retirement adjustment. These authors argued that individuals scoring high in agreeableness may be more likely to develop social support networks beyond work-related friendships, a factor that could relate to higher levels of retirement adjustment quality (H5 & H6). As for those high in conscientiousness, they may be better prepared to cope with some of the age-related health issues and financial problems associated with retirement, and they will show therefore a better adjustment to this life transition (H7 & H8). Finally, individuals scoring high in openness to experience may find it easier to acquire new, non-work related, activities during retirement, a factor that could relate to higher levels of retirement adjustment quality (H9 & H10).

As far as we know, only two studies have empirically explored these relationships. Lockenhoff et al. (2009) using a probability sample of 144 retirees found that low neuroticism and high extraversion were associated with higher overall retirement

satisfaction, and Robinson et al. (2010) using a purposively selected sample made up of 279 retirees found that high conscientiousness, high agreeableness, and low neuroticism were linked to higher life satisfaction. These studies, however, relied on cross-sectional data. So, we need longitudinal data to help disentangle such effects from the alternative causal ordering that retirement itself might instead affect levels of these personality traits.

Generativity and adjustment to retirement

As well as personality traits, generativity could also play a role in the quality of retirement adjustment. Generativity has its origins in Erikson's (Erikson, 1963, 1982) developmental theory, which proposed that the lifespan could be divided into eight stages, each one implying a certain social challenge or developmental "crisis". In Erikson's theoretical model, successfully negotiating a stage strengthens the self, or ego, and increases the likelihood that the individual is able to deal competently with the challenges of subsequent stages.

Within this model, generativity is the central task of adulthood, and is defined as the concern to nurture, guide and ensure the wellbeing of future generations and, ultimately, to leave a legacy that is going to survive us (Erikson, 1963, 1982). Generativity could be expressed by all the activities which contribute to the enhancement and maintenance of families and communities (Villar, 2012). However, generativity not only includes contributing to others, but also implies some individual benefits. Thus, there are many studies linking high generativity concerns in adulthood to life satisfaction (McAdams, de St. Aubin, & Logan, 1993; Stewart, Ostrove, & Helson, 2001) and wellbeing (Huta & Zuroff, 2007; Villar, López, & Celdrán, 2013). Vaillant (1993) even reported some longitudinal evidence for this link, supporting the idea that being generative in adulthood may promote successful coping with later life challenges. In his study, women who mastered generativity at 60 showed better adaptation to older age when assessed 17 years later.

As McAdams and colleagues have argued (McAdams & de St. Aubin, 1992; McAdams, Hart, & Maruna, 1998), generativity should be conceived as a multidimensional concept rather than as a single entity. Thus, McAdams created a model explaining how adults face the crisis of generativity, which includes several dimensions of the Eriksonian concept: inner desire, cultural demand, belief in the worthiness of the human species, generative concern, generative goals, generative behavior, and generative scripts. Of the seven dimensions, generative concern is the closest to a personality factor and the one which has been most widely addressed in previous research (Serrat, Villar, Warburton, & Petriwskyj, in press).

Generativity has been linked to individuals' positive adjustment to different life transitions and events, such as parenting (Guastello, Guastello, & Briggs, 2014; Pratt, Danso, Arnold, Norris, & Filyer, 2001), grandparenting (Thiele & Whelan, 2008; Villar, Celdrán, & Triadó, 2012), or caregiving for aging parents (Peterson, 2002). In the work domain, generativity has been mainly studied as a motive for older people to look for a job (Mor-Barak, 1995), to engage in bridge employment (Dendinger, Adams, & Jacobson, 2005; Zhan, Wang, & Shi, 2015), or to transfer the family business to the next generation (Zacher, Schmitt, & Gielnik, 2012). In a study with a sample of older university employees, working for generative

reasons predicted job satisfaction and attitudes toward retirement, in terms of perceived gains and losses associated with retirement (Dendinger et al., 2005). Finally, a study by Colby, Sippola, and Phelps (2001) used a subsample of the first wave of MIDUS, and found generative concern to predict more satisfaction with work life.

However, as far as we know, no study has explored the longitudinal impact of generative concern on the quality of retirement adjustment. If, as Erikson (1963) stated, the positive resolution of a developmental task fosters individuals' capacities for dealing with the challenges of subsequent stages, we can expect that people scoring higher on generative concern at midlife should report a better quality of retirement adjustment when they have moved toward facing the challenge that Erikson posed for older age, that is, ego integrity (H11 & H12). It also seems likely that generative concern may be particularly likely to foster satisfaction with the larger sense of purpose and meaning in life, rather than immediate emotional enjoyment (Villar et al., 2013). We describe this important distinction next.

Hedonic and eudaimonic wellbeing after retirement

Regardless of their focus, most studies of retirement have assessed adjustment quality by means of a single measure. Satisfaction with life has been the most widely used indicator (e.g. Dingenans & Henkens, 2014; Hershey & Henkens, 2014; Horner, 2014; Kim & Moen, 2001; Pinquart & Schindler, 2007), although there are also studies that have employed other measures, such as self-perceived health (e.g. Rijs, Cozijnsen, & Deeg, 2012), positive and negative affect (e.g. Burr, Santo, & Pushkar, 2011; Bye & Pushkar, 2009), depression (e.g. Butterworth et al., 2006; Kubicek et al., 2011; Virtanen et al., 2014) or emotional wellbeing (e.g. Coursolle, Sweeney, Raymo, & Ho, 2010). However, considering more than one measure could provide a broader and more reliable and valid view of what it means to be well or badly adjusted to a life transition.

In this vein, following the traditional Aristotelian distinction between the "pleasant" life and the "meaningful" life, some researchers have proposed to distinguish two different dimensions of wellbeing: hedonic wellbeing and eudaimonic wellbeing (Bauer & McAdams, 2010; Huta, 2015; Linley, Maltby, Wood, Osborne, & Hurling, 2009; Ryan & Deci, 2001). Hedonic wellbeing is defined as being satisfied with life and experiencing high levels of positive affect, and has been associated to the construct of subjective wellbeing (Diener, Emmons, Larsen, & Griffin, 1985). Eudaimonic wellbeing has to do with the idea of pursuing one's goals, realizing one's potential, and feeling that one's life is purposeful and meaningful. Such bidimensional measurement of wellbeing could be useful to assess adjustment to retirement, a transition that has the potential to alter different facets of life. In particular, we expected that generative concern would be more likely to predict eudaimonic than hedonic wellbeing during the retirement experience.

Purpose of the study

The aim of this study is to longitudinally assess the contribution of personality traits and generative concern in the prediction of hedonic and eudaimonic wellbeing at two time points

after retirement, while controlling both for the initial values on hedonic and eudaimonic wellbeing and for the effects of various personal attributes and resources. Figure 1 synthesizes the 12 hypotheses arising from the consideration of the theoretical framework.

Method

Sample

The sample was drawn from the National Survey of Midlife in the United States (MIDUS). MIDUS is currently a three-wave longitudinal study (MIDUS I: 1995–1996; MIDUS II: 2004–2006; MIDUS III: 2013–2014) of factors related to healthy aging in a national probability sample of American adults (aged 25–74 at baseline). Full information about sampling procedures, response rates, survey design, and methods is described in the MIDUS I, II, and III codebooks, available from the survey's website at <http://www.midus.wisc.edu/>.

In this study, data from MIDUS I were considered as baseline data (T1) and data from MIDUS II (T2) and MIDUS III (T3) as follow-up data. Taking into account our interest in the quality of retirement adjustment, this study was focused on a sub-set of participants who met the following conditions: 1) aged 50 and over at T1 and 2) either working, self-employed, looking for work, unemployed, temporarily laid-off, or on maternity or sick-leave at T1, and retired at T2. There were a total of 548 respondents at MIDUS II and 351 respondents at MIDUS III who met these criteria. At T2, mean age was 67.7 ($SD = 5.5$), and participants were fairly evenly split in terms of gender (51.8% female). Regarding educational attainment, 39.6% reported high school studies or less, 41.8% college, and 18.6% graduate school, masters, or PhD. The median household income was \$80,439. Close to 61% of the sample rated their mental health as very good or excellent.

As has been previously reported (e.g. Radler & Ryff, 2010), retention in the MIDUS II sample was associated with better health, higher education, and other positive factors. Our attrition analyses draw similar conclusions with regard to those who remained and those who dropped out across all three waves. Specifically, at T2, those who dropped out were older, poorer, had greater difficulty in performing activities of daily living, were less extraverted, less conscientious, less open to experience, and less generative at T1. At T3, those who dropped out were older, poorer, had greater difficulty in performing activities of daily living, less extraverted, more neurotic, and less generative. At both time points, there were also significant differences between drop-outs and respondents demonstrated by chi-square tests on gender, educational level, self-rated mental health, and self-rated physical health. Little's (1988) missing completely at random (MCAR) test was carried out using SPSS 20.0. Results were not significant ($p > .05$), indicating that missingness was at random which allows us to use full information maximum likelihood estimation (FIML) in the following structural equation analyses (Enders, 2010).

Measures

Table 1 shows all predictor and used in this study as well as their percentages, means, standard deviations, coding algorithms, wording of survey questions, and psychometric properties. Internal consistencies for multi-item variables, as measured by Cronbach's alpha,

were satisfactory, with values ranging from .57 (conscientiousness) to .90 (instrumental activities of daily living).

Analytic strategy

First, we calculated bivariate correlations between the predictor variables at T1 and the two outcomes variables at T1, T2 and T3. Analyses were performed with SPSS 20.0. Second, we performed structural equation modeling analyses using AMOS 24. These analyses used FIML to estimate missing data. We tested two models, one predicting hedonic and eudaimonic wellbeing at T2, and the other predicting these variables at T3. Each of these models therefore included two endogenous variables (hedonic and eudaimonic wellbeing assessed at T2 or T3), six exogenous variables (all measured at T1: agreeableness, extraversion, neuroticism, conscientiousness, openness to experience, and generative concern), and eight control variables also measured at baseline (age, gender, education level, income, instrumental activities of daily living, self-rated mental health, hedonic wellbeing, and eudaimonic wellbeing). To test the hypothesized models, paths were drawn according to the hypotheses presented above (see Figure 1). The six exogenous variables and the eight control variables were allowed to covary, as well as the hedonic and eudaimonic wellbeing error terms.

We adopted a multifaceted approach to assess the goodness of fit of the models tested (Tanaka, 1992), using the following criteria: chi-square likelihood ratio statistic, root mean square error of approximation (RMSEA), comparative fit index (CFI), and standardized root mean square residual (SRMR). Model fit was considered acceptable when RMSEA was lower than .08 (Browne & Cudeck, 1992), CFI was greater than .95, and SRMR was lower than .08 (Hu & Bentler, 1999).

Results

First we computed Pearson correlation coefficients to examine the associations between the predictor variables at T1 and the two outcomes variables at T1, T2 and T3. Most variables were significantly correlated (see Table 2).

Second, to assess the combined effects of control variables, personality traits, and generative concern at baseline on hedonic and eudaimonic wellbeing at T2 and T3, we tested two models, one predicting these variables at T2, and the other at T3.

Fit indices for the model predicting hedonic and eudaimonic wellbeing at T2 indicated that the model fitted the data well: the chi-square value was not significant ($\chi^2 = 4.85$, $df = 2$, $p = .089$), and the other fit indexes were adequate (RMSEA = .051, CFI = .99, SRMR = .005). The standardized path coefficients are presented in Figure 2 (additional information about the omitted coefficients is provided in Table 3 in online supplementary materials).

As can be observed, only three paths were significant. Extraversion at T1 positively predicted hedonic wellbeing at T2 ($\beta = .10$, $p < .05$), and neuroticism at T1 ($\beta = -.12$, $p < .01$) and generative concern at T1 ($\beta = .15$, $p < .001$), respectively, negatively and positively predicted eudaimonic wellbeing at T2. The model accounted for a large proportion of

variability in hedonic and eudaimonic wellbeing at T2. Specifically, R^2 values at T2 were 30% for hedonic wellbeing, and 44% for eudaimonic wellbeing.

With regards to hedonic and eudaimonic wellbeing at T3, fit indices indicated that the model fitted the data well: the chi-square value was not significant ($\chi^2 = 5.59$, $df = 2$, $p = .061$), and the other fit indexes were adequate (RMSEA = .072, CFI = .99, SRMR = .007). The standardized path coefficients are presented in Figure 3 (additional information about the omitted coefficients is provided in Table 4 in online supplementary materials).

Only three paths were significant or approached significance. Neuroticism at T1 negatively predicted both hedonic ($\beta = -.13$, $p < .05$) and eudaimonic ($\beta = -.09$, $p < .1$) wellbeing at T3, and generative concern at T1 positively predicted eudaimonic wellbeing at T3 ($\beta = .11$, $p < .05$). The model accounted for a large proportion of variability in hedonic and eudaimonic wellbeing at T3. Specifically, R^2 values at T3 were 27% for hedonic wellbeing, and 35% for eudaimonic wellbeing.

Discussion

The main aim of this study was to longitudinally assess the contribution of personality traits and generative concern in the prediction of hedonic and eudaimonic wellbeing at two time points after retirement in a major longitudinal, national sample (MIDUS), while controlling for initial values on hedonic and eudaimonic wellbeing and for the effects of personal attributes and resources. It is important to highlight that as baseline values of both hedonic and eudaimonic wellbeing were controlled in the analyses, our study is essentially predicting change in these constructs nine and 18 years later using a large longitudinal data set.

This study shows that personality traits and generative concern at midlife explain a meaningful part of the variation in individuals' quality of subsequent retirement adjustment. Results from the bivariate analyses provided support for all the hypotheses of the study. Hedonic and eudaimonic well-being at T2 and T3 were negatively associated with neuroticism (H1 & H2) and positively associated with extraversion (H3 & H4), agreeableness (H5 & H6), conscientiousness (H7 & H8), openness to experience (H9 & H10), and generative concern (H11 & H12). However, when all of these variables were combined, and the effects of initial values of wellbeing and personal attributes and resources were controlled in structural models, most of the effects of Big Five variables disappeared. Thus, only neuroticism and extraversion were significant in the prediction of retirement adjustment quality, although these effects were not consistent across waves and across well-being types.

As for neuroticism, we have found some evidence for the hypothesized inverse relationship between this variable and retirement adjustment quality (H1 & H2). Thus, individuals scoring higher in neuroticism were more likely to obtain lower scores on eudaimonic wellbeing nine years later, and lower scores both in hedonic and eudaimonic wellbeing 18 years later. These findings are consistent with the cross-sectional results from Lockenhoff et al. (2009) and Robinson et al. (2010) on life satisfaction during retirement.

As Reis and Gold (1993) have argued, individuals scoring high in neuroticism are prone to experience negative emotions and maladaptive behaviors across many situations, and they

may find it hard to cope with the problems and stresses associated with the retirement process. Neuroticism is associated with enduring affective dispositions that negatively affect life satisfaction (e.g. DeNeve & Cooper, 1998). Thus, it is not too surprising that more neurotic individuals also experience a worse quality of adjustment to retirement than less neurotic individuals do.

With regards to extraversion (H3 & H4), this variable was positively associated with retirement adjustment quality, although the effect was only significant in the case of hedonic wellbeing measured at time 2. This result is in line with Lockenhoff et al. (2009), who found a positive relationship between extraversion and overall retirement satisfaction. It appears that being active, effective, and socially involved (all characteristics of extraverted individuals) have only a mid-term effect on subjective wellbeing, but are not protective in the long run. Neither do they seem to have an impact on the possibilities of experiencing eudaimonic wellbeing which includes a sense of purpose and meaning after retirement.

As we mentioned in the introduction with regard to our literature review, the links of agreeableness, conscientiousness, and openness to experience with retirement adjustment quality have been somewhat less evident, and this fact was reflected in our results. Thus, retirement adjustment quality was not associated with agreeableness (H5 & H6), conscientiousness (H7 & H8), or openness to experience (H9 & H10). These results differ from Robinson et al. (2010), who found a positive concurrent association between the traits of conscientiousness and agreeableness and life satisfaction.

A possible explanation for this might be that the findings of this earlier cross-sectional study were actually an expression of the contrary direction of relations, with retirement satisfaction impacting traits, rather than the converse; since this study was not longitudinal in nature, we cannot know for sure. It is thus not too surprising that the relations between some personality traits and later retirement satisfaction may differ for the present study in comparison to the findings for agreeableness and conscientiousness in this previous cross-sectional analysis.

However, the fact that most of our predictions for the Big Five model were supported in bivariate correlations but not in structural models merits further discussion. There are several explanations for this. It is possible that the effects of the Big Five are not as significant as the effects of personal attributes and resources, which seem to explain some of the variation in hedonic and eudaimonic wellbeing after retirement, in line with previous research on retirement adjustment quality (e.g. Kubicek et al., 2011; Pinguart & Schindler, 2007; van Solinge, 2013; van Solinge & Henkens, 2008; Wang, 2007). It is also possible that wellbeing levels do not change that much over time, particularly when it comes to hedonic wellbeing (e.g. Ryan & Deci, 2001), and only those variables strongly associated with them therefore show a predictive effect in structural models. Construct overlap among personality and wellbeing variables (e.g. Schmutte & Ryff, 1997) could also account for these results, as well as changes in Big Five traits over time (e.g. Roberts & Mroczek, 2008), which could explain the differential association of these baseline predictors with wellbeing variables in cross-sectional and longitudinal analyses. In any case, it is now clear that further

longitudinal work is required to understand these patterns of personality trait prediction to later retirement satisfaction more fully.

Finally, a noteworthy result of our study is that generative concern (H11 & H12) was positively associated with adjustment both in the earlier and the longer periods of retirement we assessed, even after controlling for the effects of personal resources and attributes, personality traits, and initial values of wellbeing. As expected, this result only held for eudaimonic, and not hedonic, wellbeing. In this respect, the positive resolution of the generativity crisis may foster individuals' capacities for dealing with the challenges of retirement. Highly generative individuals may be able to sustain a sense of meaning and contribution to larger purposes, despite the changes that retirement brings to the area of work. In turn, this should have a positive impact on their adjustment to this important life transition into the final stage of ego integrity, as predicted from Erikson's (1963, 1982) theoretical perspective. Such ego integrity concerns regarding life meaning are likely best captured in eudaimonic rather than hedonic wellbeing, as seems to be the case for the present analyses into later life.

Although this study has produced a number of important findings, their interpretation has to be made with caution due to the following limitations. First, the sample used for this study was exclusively made up of people who were fully retired. Future research may consider those who engage in bridge employment before entering full retirement to look at its influence on the quality of adjustment. Second, as the MIDUS survey followed individuals during a period of almost 20 years, the changes in the socio-political context may certainly have had an influence on their answers. However, these contextual factors, as well as changing cultural attitudes towards retirement, could not be readily addressed in this study. Finally, some of the measures used in this study were composed of a limited number of items (e.g. well-being scales or generative concern scale), or showed modest internal consistency (particularly conscientiousness as a personality trait). Further research using longer versions of these measures is needed to confirm the robustness of the results.

Despite these limitations, this study has a number of strengths. A major strength is the use of a bidimensional measure of retirement adjustment quality, assessing both hedonic and eudaimonic wellbeing, and therefore encompassing positive personal functioning in multiple domains. Prior research has tended to assess adjustment quality by means of a single –and often unidimensional- measure, such as satisfaction with life (e.g. Dingemans & Henkens, 2015), positive and negative affect (e.g. Burr et al., 2011), or depression (e.g. Virtanen et al., 2014). The use of a bidimensional measure, focused on hedonic and eudaimonic wellbeing, is of particular significance in understanding the quality of retirement adjustment, a life transition that could affect several dimensions of life, and could be managed therefore in different ways resulting in different outcomes. The findings of this study support the value of considering these two types of wellbeing as somewhat distinctive, particularly with regard to the role of generative concern as a predictor, given its distinctive role in Erikson's theoretical model of the transition from mid to late life development.

A second major strength of this study is to have considered the influence of personality variables on the quality of retirement adjustment. Although psychological factors have been

explored in relation to other life transitions, their influence on retirement adjustment quality has been largely overlooked (van Solinge, 2013; Wang et al., 2011). Thus, this study adds to the scant literature on the topic (Lockenhoff et al., 2009; Robinson et al., 2010) and shows that personality traits as well as generative concern at midlife explain an important part of the variation in individuals' quality of subsequent retirement adjustment. Additional longitudinal research is needed in the future to test theoretical models of the transition to late life, such as Erikson's, more rigorously.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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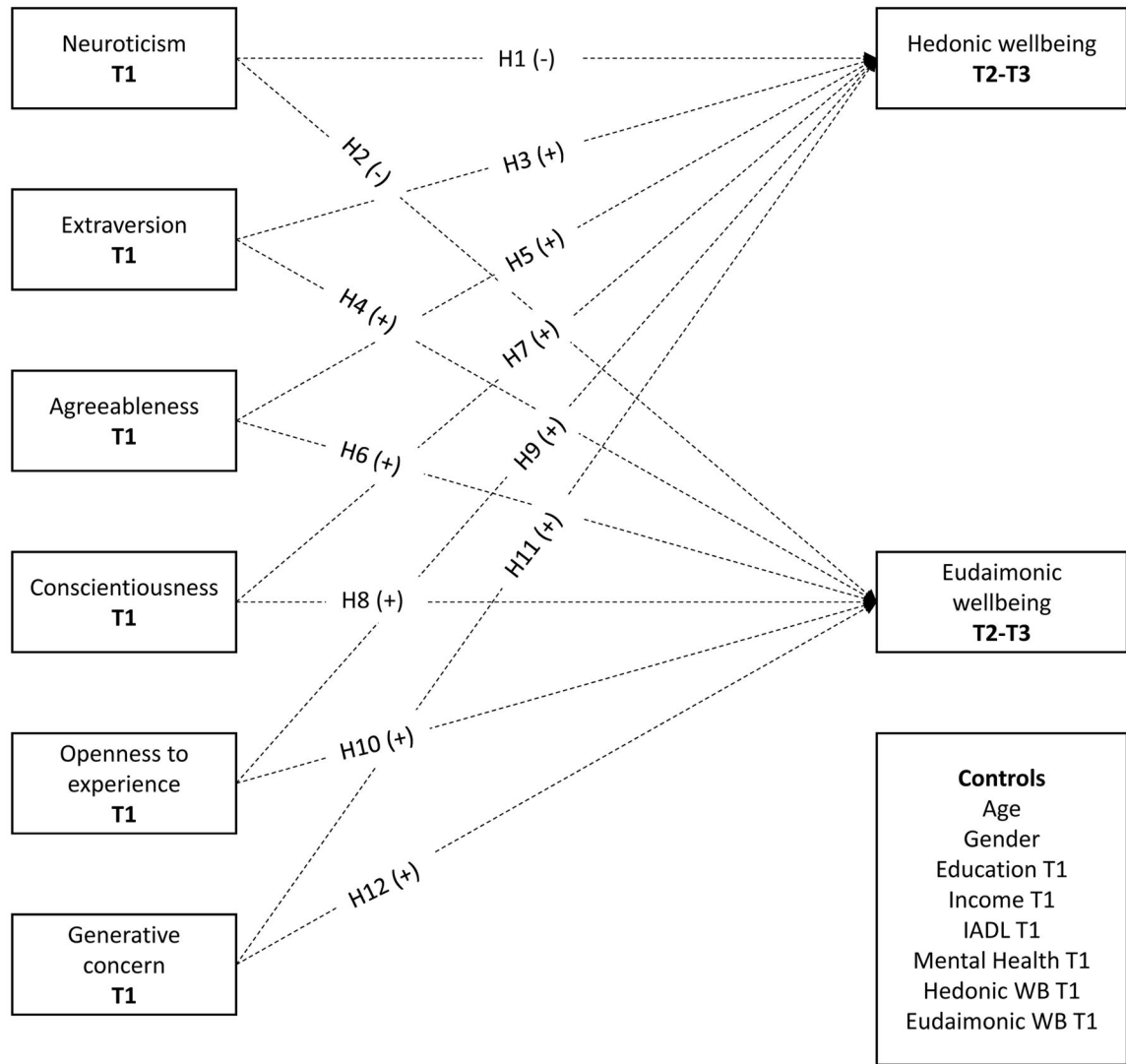


Figure 1.

Hypothesized relationships between personality traits, generativity concern, hedonic well-being and eudaimonic well-being.

Notes:

T1 = Variable assessed at T1; T2 = variable assessed at T2; T3 = variable assessed at T3; IADL = Instrumental activities of daily living.

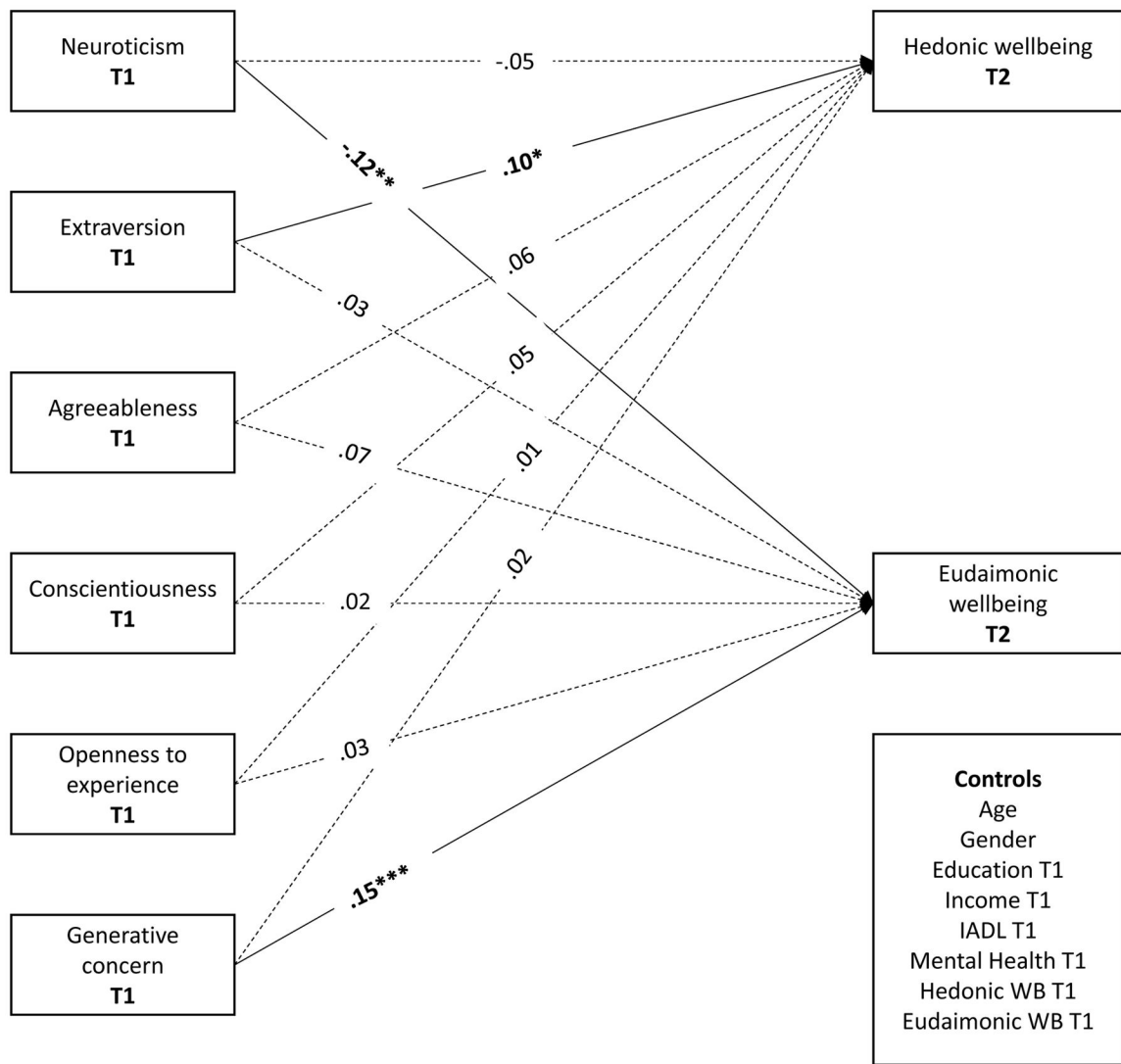


Figure 2. Results of the structural equation modeling analyses for hedonic and eudaimonic wellbeing at Time 2.

Notes:

N = 548. Standardized path coefficients are presented. Solid lines refer to significant paths, and dotted lines refer to nonsignificant paths.

* $p < .05$; ** $p < .01$; *** $p < .001$

T1 = Variable assessed at T1; T2 = variable assessed at T2; IADL = Instrumental activities of daily living.

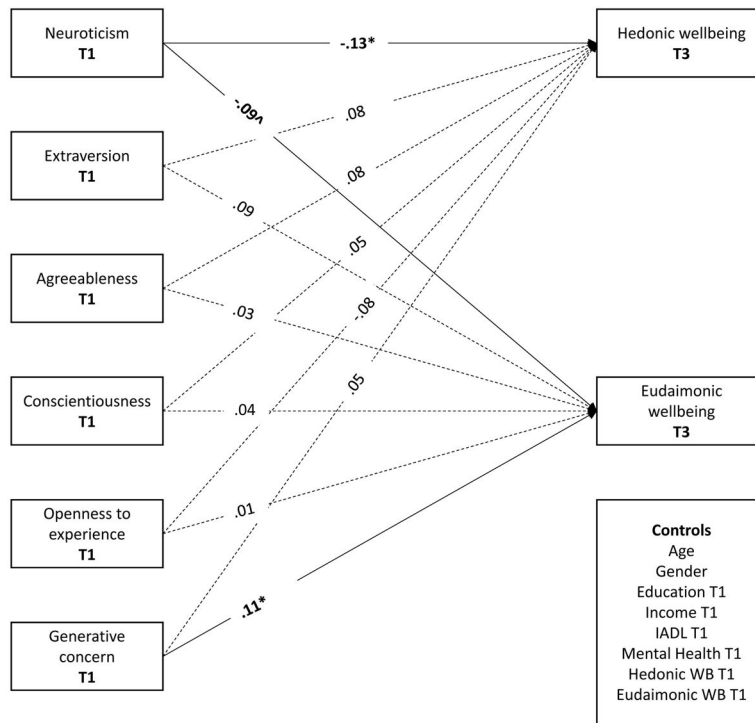


Figure 3. Results of the structural equation modeling analyses for hedonic and eudaimonic well-being at Time 3.

Notes:

N = 351. Standardized path coefficients are presented. Solid lines refer to significant paths, and dotted lines refer to nonsignificant paths.

$^{\wedge}p < .1$; $*p < .05$

T1 = Variable assessed at T1; T3 = variable assessed at T3; IADL = Instrumental activities of daily living.

Table 1

Percentages, means, standard deviations, coding algorithms, wording of survey questions, and psychometric properties of the predictor and outcome variables measured at baseline (N = 548).

Variable	%	M	SD	Coding algorithm	Wording of question/item	α
Predictors						
Control variables						
Age	-	67.7	5.5	Continuous variable		n/a
Gender	51.8	-	-	Dummy variable: 1 = female, 0 = male		n/a
Education	39.6 41.8 18.6	- - -	- - -	High school or less College Graduate school/master/PhD	What is the highest grade of school or year of college you completed? (12-answer categories: <i>no school/some grade school, eighth grade/junior high school, some high school, GED (General Equivalency Diploma), graduated from high school, 1 to 2 years of college (no degree), 3 or more years of college (no degree), graduated from a two-year college or vocational school, graduated from a four- or five-year college or bachelor's degree, some graduate school, master's degree, Ph.D, or other professional degree</i>)	n/a
Income	-	80,439	62,052	Continuous variable (in \$)	Sum of income from self, spouse, or other family members in household. Social security, government assistance, and all other sources.	n/a
Instrumental activities of daily living ¹	-	1.6	0.7	Scores constructed by calculating the mean across items (1–4 scale range)	Seven-item scale of four-point ratings (ranging from 1 = <i>not at all</i> to 4 = <i>a lot</i>). Items: <i>How much does your health limit you in doing each of the following? Lifting or carrying groceries/Climbing several flights of stairs/Bending, kneeling, or stooping/Walking more than a mile/Walking several blocks/Vigorous activities (e.g., running, lifting heavy objects)/Moderate activities (e.g., bowling, vacuuming)</i>	.90
Self-rated mental health	39.2 33.4 27.4	- - -	- - -	Poor/fair/good Very good Excellent	In general, would you say your mental or emotional health is...? (five-answer categories <i>poor, fair, good, very good, or excellent</i>)	n/a
Personality traits						
Neuroticism ²	-	2.1	0.6	Scores constructed by calculating the mean across items (1–4 scale range)	Four-item scale of four-point ratings (ranging from 1 = <i>not at all</i> to 4 = <i>a lot</i>) on <i>moody, worrying, nervous, calm</i>	.72
Extraversion ²	-	3.2	0.5	Scores constructed by calculating the mean across items (1–4 scale range)	Five-item scale of four-point ratings (ranging from 1 = <i>not at all</i> to 4 = <i>a lot</i>) on <i>outgoing, friendly, lively, active, talkative</i>	.76
Agreeableness ²	-	3.5	0.5	Scores constructed by calculating the mean across items (1–4 scale range)	Five-item scale of four-point ratings (ranging from 1 = <i>not at all</i> to 4 = <i>a lot</i>) on <i>helpful, warm, caring, softhearted, sympathetic</i>	.81
Conscientiousness ²	-	3.5	0.4	Scores constructed by calculating the mean across items (1–4 scale range)	Four-item scale of four-point ratings (ranging from 1 = <i>not at all</i> to 4 = <i>a lot</i>) on <i>organized, responsible, hardworking, careless</i>	.57
Openness to experience ²	-	3.0	0.5	Scores constructed by calculating the mean across items (1–4 scale range)	Seven-item scale of four-point ratings (ranging from 1 = <i>not at all</i> to 4 = <i>a lot</i>) on <i>creative, imaginative, intelligent, curious, broad-minded, sophisticated, adventurous</i>	.78
Generativity						

Variable	%	M	SD	Coding algorithm	Wording of question/item	α
<i>Generative concern</i> ²	-	17.3	3.7	Scores constructed by summing the values of the items (6–24 scale range)	Six-item scale, adapted from Loyola Generativity Scale (McAdams & de St. Aubin, 1992), of four-point ratings (ranging from 1 = <i>not at all</i> to 4 = <i>a lot</i>). Items: <i>Others would say that you have made unique contributions to society/You have important skills you can pass along to others/Many people come to you for advice/You feel that other people need you/You have had a good influence on the lives of many people/You like teaching things to people</i>	.85
Outcomes						
Wellbeing variables						
<i>Hedonic wellbeing</i> ²	-	1.78	0.0	Scores constructed by summing the standardized z-scores of positive affect and satisfaction with life.	Positive affect: Six-item scale, of five-point ratings (ranging from 1 = <i>all</i> to 5 = <i>none of the time</i>), on how much of the time respondents felt indicators of positive affect during the past 30 days. Items: <i>cheerful, in good spirits, extremely happy, calm and peaceful, satisfied, full of life</i> . Scores constructed by calculating the mean across items (1–5 scale range)	.91
<i>Eudaimonic wellbeing</i> ²	-	83.2	11.6	Scores constructed by summing the scores of the six subscales (18–126 scale range)	Satisfaction with life: Rate your life overall these days (ten-point ratings ranging from 0 = <i>worst possible life overall</i> to 10 = <i>best possible life overall</i>). Ryff's (1989) scales of psychological wellbeing. Each of the six scales consisted of three items of seven-point ratings (ranging from 1 = <i>strongly agree</i> to 7 = <i>strongly disagree</i>). Cronbach's alpha coefficient for all items combined was .80	n/a
					Autonomy. Items: <i>I tend to be influenced by people with strong opinions/I have confidence in my own opinions, even if they are different from the way most other people think (R)/I judge myself by what I think is important, not by the values of what others think is important (R)</i>	.47
					Environmental mastery. Items: <i>The demands of everyday life often get me down/In general, I feel I am in charge of the situation in which I live (R)/I am good at managing the responsibilities of daily life (R)</i>	.51
					Personal growth. Items: <i>For me, life has been a continuous process of learning, changing, and growth (R)/I think it is important to have new experiences that challenge how I think about myself and the world (R)/I gave up trying to make big improvements or changes in my life a long time ago</i>	.54
					Positive relations with others. Items: <i>Maintaining close relationships has been difficult and frustrating for me/People would describe me as a giving person, willing to share my time with others (R)/I have not experienced many warm and trusting relationships with others</i>	.59
					Purpose in life. Items: <i>Some people wander aimlessly through life, but I am not one of them (R)/I live life one day at a time and don't really think about the future/I sometimes feel as if I've done all there is to do in life</i>	.34

Variable	%	M	SD	Coding algorithm	Wording of question/item	α
					Self-acceptance. Items: <i>I like most parts of my personality (R)/When I look at the story of my life, I am pleased with how things have turned out so far (R)/In many ways I feel disappointed about my achievements in life</i>	.52

¹Higher scores reflect a greater difficulty in performing instrumental activities of daily life.

²Higher scores reflect higher standings on the variable.

Table 2

Bivariate correlations.

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Neuroticism T1											
2. Extraversion T1	-.18**										
3. Agreeableness T1	-.01	.51***									
4. Conscientiousness T1	-.15*	.15*	.35***								
5. Openness to experience T1	-.19***	.43***	.38***	.17**							
6. Generative concern T1	-.16**	.31***	.29***	.25***	.39***						
7. Hedonic wellbeing T1	-.50***	.27***	.16**	.14*	.13*	.14*					
8. Eudaimonic wellbeing T1	-.51***	.31***	.23***	.29***	.32***	.33***	.49***				
9. Hedonic wellbeing T2	-.40***	.27***	.15*	.09 [^]	.16*	.14*	.50***	.39***			
10. Eudaimonic wellbeing T2	-.43***	.31***	.26***	.23***	.30***	.37***	.35***	.68***	.48***		
11. Hedonic wellbeing T3	-.33***	.21***	.18**	.16**	.10 [^]	.16**	.46***	.36***	.51***	.38***	
12. Eudaimonic wellbeing T3	-.33***	.25***	.21***	.22***	.27***	.32***	.23***	.56***	.35***	.65***	.51***

Notes:

T1 = Variable assessed at T1; T2 = variable assessed at T2; T3 = variable assessed at T3.

[^] $p < .1$;

* $p < .05$;

** $p < .01$;

*** $p < .001$