Subjective well-being across the retirement transition – historical differences and the role of perceived control

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Abstract

Given substantial cohort differences in psychosocial functioning, for example in perceived control, and ongoing pension reforms, the context of retirement has changed over the last decades. However, there is limited research on the consequences of such developments on historical differences in subjective well-being in the retirement transition. In the present study, we investigated historical differences in change in life satisfaction and positive affect across the retirement transition. We further included perceived control as a predictor of change in well-being. Analyses were based on sub-samples of retirees among three nationally representative samples of the German Ageing Survey (1996; 2002; 2008) and their respective follow-ups 6 years later. Results showed historical improvements in pre-retirement positive affect (i.e., later samples had higher pre-retirement levels). Contrastingly, earlier samples showed a larger increase in positive affect across the retirement transition compared to later samples. No historical differences were found in life satisfaction. Perceived control showed no historical improvement and did not seem to contribute to historical differences in subjective well-being. Nevertheless, we found that the association of perceived control and positive affect increased over historical time. The results showed that the historical context seems to play a role in the experience of retirement, and that it is helpful to distinguish between cognitive-evaluative and affective components of well-being.

Keywords: retirement; subjective well-being; control beliefs; historical context

Introduction

Retirement is often seen as a symbolic transition from midlife into (young) old age and goes hand in hand with considerable changes in lifestyle and social roles (Laslett, 1991; Lindwall et al., 2017). Changes in subjective well-being, that is, the individual's own cognitive or affective evaluations of their lives (Diener, 2000), across the transition to retirement have received much attention in previous research (Henning, Lindwall, & Johansson, 2016; Luhmann, Hofmann, Eid, & Lucas, 2012). Although scholars have noted that macro-factors such as societal norms or governmental policies affect how well people adjust to retirement (Wang, Henkens, & van Solinge, 2011), most studies focus on individual-level predictors of change in subjective well-being after retirement (Henning et al., 2016), such as perceived control (Bye & Pushkar, 2009; Kim & Moen, 2002). However, lifespan researchers have for a long time emphasized the importance of contextual embedding of individual functioning in general and the importance of historically changing conditions for individual development in particular (P. B. Baltes, 1987; P. B. Baltes, Reese, & Nesselroade, 1977). This perspective suggests that individual resources are embedded in and interact with the historical context (Drewelies, Huxhold, & Gerstorf, 2019).

Previous studies have shown that psychosocial characteristics of older adults change with historical time (Gerstorf et al., 2019; Gerstorf et al., 2015; Gerstorf et al., 2020; Hülür et al., 2016). Furthermore, the context of retirement has changed considerably, given important pension reforms and a general policy intent on prolonging working life and fostering social participation of older adults (Ebbinghaus & Hofäcker, 2013; Hofäcker, Hess, & Naumann, 2015; Hofäcker & Radl, 2016). In the present study, grounded in lifespan developmental psychology and the dynamic resource perspective on retirement adjustment, we therefore explored potential historical differences in change in subjective well-being across the retirement transition, taking potential historical differences in perceived control into account

(Drewelies, Agrigoroaei, Lachman, & Gerstorf, 2018; Drewelies, Deeg, Huisman, & Gerstorf, 2018).

Previous studies have often tried to disentangle cohort and period effects. Given that different birth cohorts retire at different historical time points, but only retire once, it is not possible to disentangle cohort and period effects. Different birth cohorts may face different retirement conditions with different resource pools. Therefore, period and cohort effects are intrinsically linked when examining historical differences in the retirement transition. In the current study, historical differences simply refer to differences between individuals at different historical time points (cf. Drewelies et al., 2019; Huxhold, 2019). More specifically, we compare individuals retiring at different historical time points. These differences can be caused by both cohort effects (e.g., one cohort of retirees differs from the other), and / or period effects (e.g., the general context of retirement in a particular time period).

Retirement and Subjective Well-Being

Retirement is an important transition and is accompanied with challenges and opportunities (Lindwall et al., 2017), which may influence subjective well-being. According to role theory, losing the work role and work-related resources may be a stressful situation for the individual (Carter & Cook, 1995), but retiring from a stressful or physically demanding job can also result in positive changes in health and well-being (Åhlin et al., 2020). Similarly, retirement can also be an opportunity to engage in (more) meaningful and interesting activities and spend time with loved ones (Henning et al., 2021; Lachman, 1986). Mean-level effects of retirement on subjective well-being seem to be rather small: Luhmann and colleagues (2012) found in a meta-analysis that retirement was associated with a small decrease in cognitive-evaluative subjective well-being (e.g., life satisfaction), but not with affective well-being (e.g., positive affect). Nevertheless, some more recent studies indicate that retirement may also be associated with short-time increases in mental health and

subjective well-being, in line with the theoretical proposition of a “honey-moon effect” (Åhlin et al., 2020; Henning et al., 2021; Wetzel et al., 2016).

Results from group-based modelling approaches demonstrate that some people experience continuity in subjective well-being after retirement, but others experience meaningful changes (Gruszczyńska, Kroemeke, Knoll, Schwarzer, & Warner, 2020; Pinquart & Schindler, 2007; Wang, 2007). Therefore, and given the increased life expectancy and the increasing number of older adults transitioning into retirement, identifying risk and protective factors for the retirement adjustment process is an important goal (Henning et al., 2016). Psychosocial resources seem to play an important role in helping people adjust (Hansson et al., 2020; Hansson et al., 2018; Serrat, Villar, Pratt, & Stukas, 2018). In the present study, we were interested in the role of perceived control.

Perceived Control in the Retirement Transition

Perceptions of control refer to feelings of being able to achieve a desired outcome and to influence one’s environment (Robinson & Lachman, 2017; Skinner, 1996). Perceived control is considered a main resource that facilitates successful aging and adaptation to changes (M. M. Baltes & Baltes, 1986). A number of conceptually overlapping concepts such as self-efficacy, sense of control, or mastery have been used in previous research (Robinson & Lachman, 2017). Researchers sometimes also distinguish between internal and external control beliefs (Gerstorf et al., 2019), or mastery and perceived constraints (Drewelies, Agrigoroaei, et al., 2018). A common feature among these different constructs is that they differentiate between the belief that goals are within one’s capacity, or that others (people or circumstances) limit one’s ability to achieve his or her goals. Nevertheless, in many studies, a global control factor is used. We therefore use the global term “perceived control” in the present paper.

Perceived control seems to shape behaviour and experiences across the lifespan, and higher control is commonly associated with better physical cognitive and mental health (Agrigoroaei, Neupert, & Lachman, 2013; Infurna & Gerstorf, 2013, 2014; Lachman, Neupert, & Agrigoroaei, 2011; Reich & Infurna, 2017). A higher level of perceived control is also associated with higher subjective well-being in old age, both cross-sectionally and longitudinally (Berg, Hassing, Thorvaldsson, & Johansson, 2011; Gerstorf et al., 2014; Infurna, Gerstorf, Ram, Schupp, & Wagner, 2011). However, illusionary high levels of control can also have negative consequences (e.g. Lang & Heckhausen, 2001). In the retirement transition, perceived control can be a particularly important resource: Perceived control is associated with better stress regulation strategies and more adaptive emotional reactivity (Robinson & Lachman, 2017), and could thus buffer losses of resources and other potential challenges in the adjustment process (Wang, 2007). In addition, high levels of perceived control may lead to more proactive search for social support and engagement in health behaviours (Lachman et al., 2011; Robinson & Lachman, 2017). Furthermore, before retirement, external factors (i.e., the work place and its structures) shape much of the retirees' activities, resources and day structure, whereas afterwards, retirees need to proactively shape their post-retirement environment (Hamm, Heckhausen, Shane, & Lachman, 2020; Segel-Karpas, Ayalon, & Lachman, 2018). Retirees may, for example, need to proactively search for new activities and social contacts (Henning et al., 2021), find ways to stay physically active (McDonald et al., 2017) and engage in an identity negotiation process (Froidevaux, Hirschi, & Wang, 2018). Such activities should be easier for those with higher levels of control. Concluding, feelings of control may thus be valuable for older adults going through the retirement transition in order to successfully adjust (Bye & Pushkar, 2009).

Research on control and subjective well-being in the retirement transition is limited: In cross-sectional studies among recent retirees, higher perceived control has been associated

with better affective subjective well-being (Bye & Pushkar, 2009), higher retirement satisfaction (Donaldson, Earl, & Muratore, 2010; Earl, Gerrans, & Halim, 2015; Price & Balaswamy, 2009), and better perceived adjustment (Donaldson, Earl, & Muratore, 2010; Earl, Gerrans, & Halim, 2015). However, because of a lack of longitudinal studies, it is unclear whether or not perceived control is also a resource for experiencing increases in well-being across retirement. In a prospective study, Kim and Moen (2002) found that higher pre-retirement control was associated with increases in morale for men and decreases in depressive symptoms for women. In the present paper, we aim to replicate these results by studying the role of perceived control for changes in subjective well-being across retirement, while taking the role of the historical context into account.

Changes in the Macro-Context of Retirement

Research on retirement adjustment has rarely considered the role of historical context (Wetzel, 2017). The dynamic resource-based perspective on retirement adjustment implies that interindividual differences in adjustment can be explained by interindividual differences in resources (Wang et al., 2011). If the availability of resources differs with historical time, retirees later in historical time should also differ from earlier retirees. In the present study, we focus on retirees in Germany between 1996 and 2014. The German macro-context of retirement has changed in important ways in in this period. There has been a general shift from an “early-exit” policy, fostering early retirement to reduce unemployment, in the 1990’s, to a focus on prolonged working lives (Hofäcker, Hess, & König, 2019; Hofaecker, Schroeder, Li, & Flynn, 2016). New laws have made it harder to retire early, as early retirement ages for specific groups have been abolished or raised (Brussig, Knuth, & Mümken, 2016). Furthermore, the mandatory retirement age will be raised gradually from 65 to 67, starting in 2012. Finally, research indicates that working in retirement has become more common (Hofäcker & Naumann, 2015). Most likely, these changes have had an impact on the resources of retirees. Nevertheless, given the lack of studies on the consequences of these

developments, it remains unclear if they are related to historical increases or decreases in retirement adjustment.

Historical Differences in Perceived Control

Not only the general context of retirement has changed, older adults have, too. In the present study, we study these cohort differences as a potential driver of historical differences in subjective well-being across retirement. Research has shown that old age has changed with historical time and “gotten younger” in several important aspects (Gerstorf et al., 2015), including perceptions of control. Gerstorf and colleagues (Gerstorf et al., 2019) suggest several reasons as to why the historical context should affect levels and trajectories of control beliefs. First, early life experiences of earlier born cohorts were characterized by dramatic events that left little control to individuals. In our study, we included individuals retiring between 1996 and 2002, 2002 and 2008, and 2008 and 2014 in Germany. Participants who were 60 years old in 1996 were born during the Nazi dictatorship in Germany and experienced World War II as children, whereas those who were 60 years old in 2008 grew up during the so-called “Wirtschaftswunder” (“economic wonder”) years of increasing economic success and reconstruction of Germany. Second, the authors argue that cultural belief systems and norms have changed, and now greatly emphasize individuals’ right and duty to take control. A third reason are historical improvements of cognitive and physical health, which may allow older adults to more easily preserve independence and maintain control over their lives. These changes are not typical for one birth cohort, but rather happened gradually over time and thus should lead to gradual improvements in perceived control for later birth cohorts (cf. Huxhold, 2019).

In line with this theoretical reasoning, later-born older adults have often been found to report higher levels of control than earlier-born older adults (Deeg & Huisman, 2010; Drewelies, Deeg, et al., 2018; Suanet & van Tilburg, 2019), as well as a more internal and less

external locus of control (Gerstorf et al., 2019; Hülür et al., 2016). However, there is more evidence for decreases in perceived constraints than for increases in mastery, and this improvement may be mainly present in older adults, not in younger adults (Drewelies, Agrigoroaei, et al., 2018). Nevertheless, given the overall historical increase in perceived control among older adults, later retirees may be better prepared to deal with the transition and experience better outcomes. Previous studies have shown that not only levels, but also change in well-being or health can differ between cohorts (Gerstorf et al., 2015; Thorvaldsson, Karlsson, Skoog, Skoog, & Johansson, 2016). Therefore, because of higher levels of pre-retirement control, both level and change in subjective well-being across retirement may be more favourable among later retirees.

The Increasing Importance of Perceiving Control

Not only level or change, but also predictors of level or change are affected by the historical context (Böger & Huxhold, 2020; Karlsson et al., 2018). Therefore, we assume that the predictive strength of perceived control may even have increased with historical time. Drewelies and colleagues (2019) emphasized that the role of individual-level factors for individual functioning can change with historical time if contextual factors are changing. The authors argued that perceived control has become a more important resource in Western societies, as societies are experiencing growing tendencies of individualization and modernization (Baumeister, 1991; Beck, 1992). Individualization allows, but also requires a more proactive role of the individual in shaping their life circumstances (Suanet & van Tilburg, 2019). This is especially relevant for the period of retirement. Scholars have argued that the life course becomes more de-standardized (Mayer, 2009), and that the process of retirement has become more individualized with historical time (Moffatt & Heaven, 2017; Vickerstaff & Cox, 2005; Vickerstaff, Twigg, & Martin, 2015). Retirees are increasingly required to choose their own way of retirement (e.g., abrupt or gradual, with bridge employment or a full-exit) and develop a sufficient pension plan, as pension systems are

partly privatized in many countries (Ebbinghaus, 2015). Such actions require active planning and decision-making (Moffatt & Heaven, 2017) and perceived control is important for such planning activities (Moen, Sweet, & Swisher, 2005).

Concluding, historically increasing perceptions of control among older adults may lead to larger increases in subjective well-being across the retirement transition. The role of control may even have increased with historical time.

The Present Study

In the present study, we used data from the German Ageing Survey DEAS (Klaus et al., 2017), and compared three groups of retirees, retiring between 1996 and 2002, between 2002 and 2008, or between 2008 and 2014, on their pre-retirement level in subjective well-being, as well as change in subjective well-being across the transition. Each group was drawn from a nationally representative sample. Our main focus was on change in subjective well-being across the transition, as the rate of change is usually seen as an indicator of retirement adjustment (Hansson et al., 2018; Wetzel et al., 2016). We included historical differences in perceived control, to test if historical differences in subjective well-being were still present when differences in control were considered.

Based on theory and previous findings, we expected:

H1: There are positive historical differences in terms of change in subjective well-being across retirement (e.g., later samples experience more positive change in subjective well-being than earlier samples).

H2: Historical differences in change in subjective well-being are not significant once historical differences in control are taken into account.

H3: Higher perceived control is associated with increases in subjective well-being across the retirement transition.

H4: The role of perceived control for change in subjective well-being across the retirement transition increased over historical time.

We further investigated potential associations of historical time and perceived control with pre-retirement well-being. However, we did not have any hypotheses for these relations and view them as exploratory analyses.

Methods

Participants

We used data from the German Ageing Survey (DEAS, Klaus et al., 2017). This ongoing longitudinal survey is currently based on four different nationally representative samples of the population aged 40-85, assessed for the first time in 1996, 2002, 2008, and 2014, respectively. Each sample has also been re-interviewed at the following assessments, with additional panel interviews in 2011 and 2017. In the current study, we focused on those who retired between their respective baseline assessment (1996, 2002, or 2008) and the first follow-up six years later (2002, 2008, or 2014) to increase representativeness (Wetzel, Bowen, & Huxhold, 2019). The definition of retirement differs between studies (Eyjólfsdóttir, Baumann, Agahi, & Lennartsson, 2019). In the present study, we defined retirement as withdrawing old age pensions (cf. Kim & Moen, 2002), because Germany has a mandatory retirement age, and starting to withdraw pension is the time point when older adults “officially” become a retiree. This definition is common in German studies on retirement (Pinquart & Schindler, 2007; Wetzel et al., 2019) and earlier studies showed that this seems to be the time point when status change and lifestyle changes set in (Wetzel et al., 2016). Therefore, we included individuals who did not withdraw old-age pension at the baseline assessment, but took them out at the respective first follow-up. This includes people who were unemployed, taking out disability pensions, or not working for other reasons before retirement. Including these groups is important as non-traditional retirement transitions are increasingly common in Germany (Engstler & Romeu Gordo, 2017) and the pre-retirement work status is associated with adjustment pattern (Schmälzle, Wetzel, & Huxhold, 2019).

Furthermore, we excluded those who retired outside of the legal retirement age-window in Germany in that period (60-65), because as they were either not eligible to receive pensions, or started to withdraw pensions later than normal, we could not be certain about their actual retirement timing and work status. We only included individuals with data on outcome variables to build latent factors. The final sample included $N = 564$, with $n = 196$ retirees between 1996 and 2002, $n = 111$ between 2002 and 2008, and $n = 257$ between 2008 and 2014.

Measures

Subjective Well-Being. Subjective well-being was operationalized using life satisfaction and positive affect to include both cognitive-evaluative and affective components. This distinction is important as reaction and adaption to life events differ between both components, and affective well-being seems to be less affected by retirement than cognitive well-being (Luhmann et al., 2012). Life satisfaction was assessed using the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). This scale includes five items (e.g., “In most ways my life is close to ideal”) which were rated on a 5-point scale (1 = strongly agree to 5 = strongly disagree). Cronbach’s alpha reliabilities were $\alpha = .86$ for pre- and $\alpha = .82$ for post-retirement life satisfaction. Positive affect was assessed using the PANAS scale (Watson, Clark, & Tellegen, 1988), which includes 20 affect items, of which 10 are positive (e.g., “excited”), rated on a 5-point scale (1 = never to 5 = very frequently).¹ Reliability was $\alpha = .86$ for pre-retirement positive affect and $\alpha = .84$ for post-retirement positive affect.

Perceived Control. The DEAS dataset does not include a standard measure of perceived control. However, previous studies have used items of the dispositional hope scale

¹ The PANAS also includes ten negative affect items. However, we could only establish weak measurement invariance across time and groups. The invariance problems seem to be associated with the item “sad” – partial invariance could be established if item intercepts for this items were estimated freely across groups. However, since our analyses concentrated on comparisons of latent means we required strong measurement invariance.

(Snyder et al., 1991) as a measure of control beliefs or perceived control (Curtis, Huxhold, & Windsor, 2018; Drewelies, Wagner, Tesch-Roemer, Heckhausen, & Gerstorf, 2017; Schöllgen, Huxhold, Schüz, & Tesch-Römer, 2011; Wurm, Tesch-Römer, & Tomasik, 2007). Four items assess pathways (e.g., “I can think of many ways to get the things in life that are most important to me”) and four items measure agency (e.g., “I meet the goals that I set for myself”). All items can be found in the supplementary materials. These items are very close to the definition of control beliefs as “the degree to which one expects to be able to bring about desired outcomes or to overcome external constraints in order to reach goals” (Robinson & Lachman, 2017, p. 346). Previous studies found that the scale correlates highly with other measures of control-related concepts such as self-efficacy (Curtis et al., 2018). The eight statements were rated on a four-point scale (1 = strongly agree to 4 = strongly disagree). Scores were reversed so higher scores indicate higher perceived control. Mean scores were used in the analyses. Cronbach’s alpha was .83.

Covariates. We included age, gender (0 = male, 1 = female), income, education according to ISCED categories (1 = less than primary, primary or lower secondary level of education, 2 = upper secondary or post-secondary non-tertiary education, and 3 = tertiary education), living in former East vs. West Germany (0 = West Germany, 1 = East Germany), as well as multimorbidity from the baseline interview as covariates. Education was recoded (-1 = low, 0 = middle, 1 = high). Income was assessed based on the OECD net equivalent income and corrected for inflation in reference to the income level of 1996. Multimorbidity was assessed using a list of eleven conditions (e.g., cardiovascular diseases, circulatory problems, Spuling, Huxhold, & Wurm, 2015). We further included pre-retirement work status. The original item had several different options (e.g., working full time, working part-time, unemployed, early retirement...) which slightly differed between assessments, but we dichotomized the item (0 = working, 1 = not working). We also included post-retirement work

(0 = not working, 1 = working) from the follow-up interview. Covariates were chosen because they may have changed with historical time because of general secular changes (e.g., health, education) or pension reforms (income, pre-retirement and post-retirement work status) and may also influence control and well-being across retirement. Gender was chosen because reactions to retirement differ by gender (Kim & Moen, 2002). The region was included because the DEAS oversampled participants from the former East in order to increase the power for East vs. West comparisons; older adults in East Germany often show lower levels of well-being (Vogel, Gerstorf, Ram, Goebel, & Wagner, 2015).

Analysis

We ran two separate multi-group latent change score models (McArdle, 2009) in Mplus 8.4 (Muthén & Muthén, 2020) to study change across retirement in life satisfaction and positive affect. In this model, well-being scores from the two time points were modelled as a baseline score and a change score, which allowed us to predict both separately. Period of retirement (retirement 1996-2002; 2002-2008; 2008-2014) was included as the grouping variable. Missing data were handled using the robust full information maximum likelihood estimator (MLR, Enders, 2010). The alpha level for all analyses was set to 0.05.

Well-being measures were modelled as latent factors. Item-specific residual variances were allowed to correlate across time. For positive affect, we followed Crawford and Henry (2004) and allowed further theoretically meaningful inter-correlations of residual variances, based on mood categories (Zevon & Tellegen, 1982). For life satisfaction, we followed Glaesmer, Grande, Braehler, and Roth (2011) and allowed error correlations for the two items that referred to life in the past (“So far I have gotten the important things I want in my life” and “If I could live my life over, I would change almost nothing.”).

We examined measurement invariance across time and groups. First, configural measurement invariance (i.e., same factor structure) across time and groups was inspected

based on overall model fit. Model fit was examined with the comparative fit index (CFI), the Tucker-Lewis Index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean residual (SRMR). Following Marsh (2007), a CFI and TLI of .90 or higher, as well as a SRMR and RMSEA of .08 or lower marks an acceptable fit to the data. Second, we tested for weak invariance (equal factor loadings) across time. Third, we tested for weak invariance across time and groups. Fourth, we tested for strong invariance (equal item intercepts) across time. Finally, we tested for strong invariance across time and groups. Weak and strong measurement invariance were evaluated based on recommendations by Chen (2007). Weak measure invariance would be supported if CFI decreased by less than 0.010, and RMSEA increased by less than 0.015, or SRMR increased by less than 0.030. Strong measurement invariance required that CFI decreased by less than 0.010, and RMSEA increased by less than 0.015 or SRMR increased by less than 0.010.

To test Hypothesis 1 (if there were historical differences) we computed a multigroup latent change score model without covariates. Baseline and change scores were correlated. We proceeded by comparing the χ^2 model fit of a model with change across groups constrained to equality to a model with linear historical differences (i.e., every later sample differed from the earlier sample to the same extent)². If the model with linear historical differences had a better fit, and the historical difference was positive, this would support H1. We also tested for linear historical differences in (pre-retirement) baseline subjective well-being in the same way, keeping the restrictions from the previous step. For exploratory reasons, we further tested if the variance in change or level of subjective well-being had systematically decreased or increased across historical time (cf. Costanza, Ravid, & Slaughter,

² This is possible in Mplus using the model constraints option by introducing a new parameter for the size of historical differences (x) and estimating change in every group by a linear equation (Change 1996-2002: Change 1996-2002 + 0*x; Change 2002-2008: Change 1996-2002+1*x, Change 2002-2008: Change 1996-2002 + 2*x (cf. Spuling, Wurm, Tesch-Römer, & Huxhold, 2015).

2021). Because of the increased heterogeneity of work life and retirement transition patterns, retirees' experiences may become more heterogeneous with historical time.

Next, to test if perceived control could explain historical differences (hypothesis 2), we repeated the model tests with intercepts of level and change adjusted for different levels of perceived control. In all latent change score models with predictors, we controlled for differences in baseline levels to account for regression to the mean. If there was no linear historical difference anymore, this would be support for hypothesis 2. Next, we compared a model with the association of control and change in well-being constrained to equality in all groups to a model with linear historical differences in the association. If the model with linear historical differences had a better fit, and if the estimated difference was positive, this would mean that the association became stronger over historical time, in line with hypothesis 4. If control had a positive association with change in subjective well-being, this would be support for hypothesis 3. We repeated this procedure for the association of control and baseline subjective well-being as well.

Finally, we repeated the comparisons, controlling for covariates, as a robustness check. Continuous covariates and perceived control were grand mean centered. The effects of region (East vs. West Germany) were allowed to differ between groups, because the German unification took place in 1990 and East German participants retiring between 1996 and 2002 may have resembled their West German peers less than those retiring in later waves.

Results

Descriptive Statistics

Table 1 shows descriptive statistics of the study variables at the three time points. Against our expectations, the groups did not differ significantly with respect to control ($F(2) = 0.46, p = .631$), which speaks against a historical increase in perceived control. A table of intercorrelations can be found in the supplementary materials (Table S1).

[please insert Table 1 here]

Measurement invariance

We could establish strong measurement invariance across time and groups for both well-being facets (Table 2). The final model fit was good concerning all fit indices except the SRMR (.087 and .084), which was slightly higher than the above-mentioned threshold. However, the SRMR is sensitive to small sample sizes. Furthermore, other authors have proposed that a cut-off value for SRMR of $< .10$ might be more appropriate (Kline, 2015). Therefore, we argue that overall model fit was acceptable.

[please insert Table 2 here]

Historical Differences in Change in SWB (Hypothesis 1).

Life Satisfaction. In a freely estimated multigroup latent change score model of change in life satisfaction, there was a significant increase in those retiring 1996 - 2002 ($M_{\text{change}} = 0.16$, $SE = 0.07$, $p = .025$) and 2008 - 2014 ($M_{\text{change}} = 0.18$, $SE = 0.05$, $p < .001$), but not in those retiring between 2002 and 2008 ($M_{\text{change}} = -0.02$, $SE = 0.09$, $p = .841$).

In contrast to hypothesis 1, a model with linear historical differences in change did not have a better model fit than a model with the change score set to equality across groups ($\Delta\chi^2(1) = 0.29$, $p = .592$). A model with linear historical differences in baseline life satisfaction did not differ significantly from a model with levels set equal across groups ($\Delta\chi^2(2) = 0.30$, $p = .582$).

A model with linear historical decreases in the variance in change showed a better model fit than a model with fixed variances ($\Delta\chi^2(1) = 6.79$, $p = .009$). This means that heterogeneity in change decreased with historical time ($B = -0.16$, $SE = 0.07$, $p = .015$). A model with linear historical differences in the variance of life satisfaction did not differ significantly from a model with fixed variances ($\Delta\chi^2(1) = 0.10$, $p = .752$). Because of a bad model fit (the SRMR increased from .090 to .120), we allowed the variances of levels to differ

freely. The final model thus included the same levels and change in life satisfaction across groups, but a historically decreasing variance in change (see Table 3).

Positive Affect. The freely estimated change in positive affect was statistically significant and positive in the group retiring 1996- 2002 ($M_{\text{change}} = 0.14$, $SE = 0.05$, $p = .004$), but non-significant in those retiring 2002 - 2008 ($M_{\text{change}} = -0.01$, $SE = 0.06$, $p = .871$), or 2008 - 2014 ($M_{\text{change}} = -0.05$, $SE = 0.03$, $p = .069$). A model with linear historical differences showed a significantly better fit than a model with the change set to equality across groups ($\Delta\chi^2(1) = 11.75$; $p < .001$). In contrast to hypothesis 1, however, the estimated time trend was negative ($B = -0.09$, $SE = 0.03$, $p = .001$), which indicates a diminishing change from initial gains to small decreases with historical time.

A model with additional linear historical differences in baseline positive affect showed a better model fit than a model with the baseline life satisfaction set to equality across groups ($\Delta\chi^2(1) = -44.57$, $p < .001$). Historical differences in baseline positive affect were positive ($B = 0.15$; $SE = 0.03$, $p < .001$), which means that levels were higher in later samples. Figure 1 illustrates the findings.

[please insert Figure 1 here]

As for life satisfaction, a model with linear historical declines in variance in change showed a significantly better fit than a model with fixed variances in change ($\Delta\chi^2(1) = 5.22$, $p = .022$), which means that later samples differed less than earlier groups ($B = -0.08$, $SE = 0.03$, $p = .017$). Setting the variances in levels to be the same did not show a worse fit than allowing linear historical differences ($\Delta\chi^2(1) = 0.32$, $p = .573$), but the fit was worse than a model with freely estimated variances ($\Delta\chi^2(1) = 4.58$, $p = .032$). The final model was therefore a model with historically increasing pre-retirement levels, decreasing change, and decreasing variance in change (Table 3).

[please insert Table 3 here]

Sensitivity analyses

Repeating these models with individuals with a retirement age below 60 years or above 65 ($n = 117$) included led to the same final models (model comparisons can be found in Table S2). We conducted further sensitivity analyses to test if there was evidence for gender-specific historical developments, which did not seem to be the case (see *p.4* and Table S3 in the supplementary materials).

The role of perceived control for historical differences in subjective well-being (H2).

We added perceived control as a predictor of level and change in both well-being factors, controlling for baseline levels. We repeated the previous analyses to test if historical differences in change in well-being were not significant once historical differences in control were taken into account (H2). Although we had not found support for historical differences in change in life satisfaction anyway, we still also run analyses for life satisfaction as a robustness check. Associations of control and level and change in well-being were allowed to differ freely between groups.

Model comparisons led to the same final models: Allowing linear historical differences in change in life satisfaction did not improve the model fit significantly, compared to a model with the same change in life satisfaction in all groups ($\Delta\chi^2(1) = 1.04, p = .308$). Likewise, a model with historical differences in level of life satisfaction did not differ significantly in fit from a model with the same levels in all groups ($\Delta\chi^2(1) = 0.08, p = .752$). Allowing linear historical decreases in change ($\Delta\chi^2(1) = 8.47, p = .004$) and increases in levels ($\Delta\chi^2(1) = 97.10, p < .001$) of positive affect improved the model fit significantly. These results are in contrast to Hypothesis 2.

The (historically changing) role of perceived control (H3 & H4).

In a last step, we investigated the role of perceived control for change in subjective well-being. Model constraints (except for variances) from the previous steps were retained.

Life Satisfaction. Fixing the association of control and change ($\Delta\chi^2(1) = 2.52, p = .113$) as well as the association of control and level of life satisfaction ($\Delta\chi^2(1) = 0.05, p = .831$) to be equal across time periods did not lead to a significant decrease in model fit, compared to models with historically changing effects. Hence we report the findings from the equality model. Higher perceived control was related to higher life satisfaction at baseline ($B = 1.04; SE = 0.08, p < .001$). The association of control and change in life satisfaction was positive and significant ($B = 0.17; SE = 0.09, p = .047$), in line with Hypothesis 3. The stable association of control and change in life satisfaction is in contrast to Hypothesis 4 that predicted a stronger association in later samples.

Positive Affect. Fixing the association of control and change in positive affect to be equal across time periods did not lead to a significant decrease in model fit, compared to a model with historically changing effects ($\Delta\chi^2(1) = 1.08, p = .298$). Therefore, in contrast to Hypothesis 4, the association did not differ across historical time. In contrast to Hypothesis 3, the association of control and change in positive affect was not significant ($B = 0.05, SE = 0.06, p = .366$).

However, a model with historical differences in the association of control and baseline positive affect had a significantly better fit ($\Delta\chi^2(1) = 10.21, p = .001$). This association increased with historical time ($B = 0.15, SE = 0.05; p = .005$). In the sample retiring between 1996 and 2002, the association was $B = 0.52, SE = 0.08, p < .001$, in the sample retiring between 2002 and 2008, the association was $B = 0.67, SE = 0.06, p < .001$, and in the sample retiring between 2008 and 2014, the association was $B = 0.82, SE = 0.08, p < .001$. Figure 2 illustrates this historically changing association – the line representing the association of affect and control is steeper in later samples.

[please insert Figure 2 here]

Covariates

Finally, we repeated the model comparisons after controlling for perceived control and covariates. When FIML was used to account for missingness in the predictor variables, the model showed a non-positive definite latent covariance matrix, because too many parameters were estimated in relation to the group sizes. When FIML was only used for dependent variables, the model converged without estimation problems, but we had to exclude 90 participants and the sample size was reduced to $n = 474$. Effects of covariates were set to equality across groups. Model comparisons led to the same results. Test statistics and effects of all predictor variables in the final models can be found in the supplementary materials (Tables S4, S5 and S6). The association of perceived control and change in life satisfaction remained statistically significant ($B = 0.23$, $SE = 0.09$, $p = .010$).

Discussion

In the present study, we were interested in the role of the historical context and individual perceived control on changes in subjective well-being across the retirement transition. Analyses were based on three sub-samples of participants from the German Ageing Survey, retiring between 1996 – 2002, 2002-2008, and 2008-2014. Based on theoretical notions from lifespan psychology (Drewelies et al., 2019) and the resource perspective on retirement adjustment (Wang et al., 2011) we expected positive historical differences in change in subjective well-being (i.e., larger increases in later samples, Hypothesis 1), no significant historical differences once historical improvements in perceived control were taken into account (Hypothesis 2), and a positive association of perceived control with changes in subjective well-being (Hypothesis 3), which was supposed to be larger in later samples (Hypothesis 4).

Our results showed that on average, life satisfaction increased across retirement, but positive affect did not change significantly. In contrast to Hypothesis 1, there was no historical increase in change in subjective well-being. Whereas the increases in life

satisfaction where of comparable size across groups, there was a negative time trend in change in positive affect. In the earliest group of retirees, positive affect increased, whereas the development of later samples was characterized by stability. Pre-retirement positive affect showed historical improvements, with later samples reporting higher positive affect. The variance in change decreased for both life satisfaction and positive affect, which means that change became more uniform across historical time.

In contrast to Hypothesis 2, levels of perceived control were similar among the three groups and controlling for group differences in control led to the same results. Perceived control was associated with both higher initial levels of life satisfaction and higher positive affect, but only with change in life satisfaction. Thus, hypothesis 3 is only partly supported. In contrast to Hypothesis 4, the association of control and change was similar across groups. However, we found that the association of perceived control and positive affect at baseline increased with historical time.

Historical differences in subjective well-being

The historical increase in positive affect is in line with a previous study (Gerstorf et al., 2015), showing historically improved positive affect when comparing two German samples. One explanation for the domain specific effects may be that life satisfaction requires an evaluation of the given circumstances, and the reference group for this comparison is likely the own cohort, which resembles findings on the “Keeping up with the Jones” effect (Guven & Sørensen, 2012). This effect describes the phenomenon that people compare their individual situation to a specific peer group to judge their own situation, instead of comparing it to stable standards. Hence, even if circumstances improved with historical time, life satisfaction ratings may be historically stable, if the whole reference group (i.e., concurrent retirees) experiences similar circumstances. Reports of affect frequency are presumably not as much based on cognitive-evaluative processes as ratings of life satisfaction, and may thus be

more directly comparable across historical time than life satisfaction. Possible explanations for the historical improvement in affect include higher education and better social resources later in historical time (Drewelies et al., 2019; Gerstorf et al., 2015).

In contrast to the positive development of pre-retirement positive affect, increases in positive affect with the transition diminished with historical time and the post-retirement positive affect was similar for later and earlier-born cohorts. One explanation is that the improvement of the pre-retirement situation of later-born cohorts meant that life in retirement did not provide much additional joy anymore. For example, social networks seem to have historically increased already in the years before retirement (Suanet & Huxhold, 2020). Furthermore, previous studies showed that people within negative work environments report more depressive symptoms before retirement but benefit more from retiring (Åhlin et al., 2020; Fleischmann, Xue, & Head, 2019). A recent study showed historical improvements of control and innovation capacity at work (Hülür, Ram, Willis, Schaie, & Gerstorf, 2019). If later-born cohorts in our sample generally experienced more positive work environments than earlier-born cohorts as well, their pre-retirement positive affect would be improved, and the increased positive affect experienced due to the relief from negative work environments might have disappeared.

Later groups showed more uniform patterns of change in subjective well-being. These findings contrast with ideas of a de-standardization of the life course (Mayer, 2009), which would imply larger differences in later samples. One reason may be that earlier differences were partly related to differences in work environments, and later samples mostly consisted of white-collar workers with little physical strains at work. Alternatively, because earlier retirement has become harder to realize after different pension reforms, at least in the latest sample, a subgroup of retirees with a particular pattern of change may still be working and

therefore be missing in our analyses. More studies are needed to test if such effects can be replicated or are unique to our sample.

The Role of Perceived Control

There was no evidence for historical improvements in control (Drewelies, Deeg, et al., 2018). It is possible that the investigated time period is comparably short to find cohort differences – the first assessment was in 1996, and the last was only 12 years later. Previous studies often used longer time intervals (Drewelies, Deeg, et al., 2018; Hülür et al., 2016). The inclusion of more recent or more dated data, may show stronger differences. Another explanation is that the scale used in our study is not a typical control scale and focuses more on mastery than perceived constraints. Whereas most studies have shown historically reduced constraints, mastery may have changed less (Drewelies, Agrigoroaei, et al., 2018).

The positive relationship between perceived control and change in life satisfaction is in line with our expectations and previous findings (Kim & Moen, 2002). Perceiving control may enable individuals to successfully master the transition by proactive adjustment behaviours (Hamm et al., 2020). Interestingly, we found this association only for life satisfaction, not for positive affect. Given the association with depressive symptoms in the study by Kim and Moen (2002), perceived control may be more strongly related to change in negative affect than positive affect.

Hypothesis 4 suggested that the association of perceived control and well-being changed with historical time, because of processes of individualization and modernization, which require a more active role of the individual in shaping their own life (Drewelies et al., 2019), in particular in retirement (Vickerstaff & Cox, 2005). Whereas the hypothesis was not confirmed when it comes to change, the association of perceived control and pre-retirement positive affect was stronger in later samples. Perceiving control over one's environment may have become more important for affective experiences. However, the direction of effects is

unclear and it may also have become more important to feel positive affect to feel in control. By looking at Figure 2 in another way, it also becomes clear that the historical improvement in positive affect is mainly present for those with high perceived control; people with lower perceived control in the different retirement cohorts did not differ to a comparable degree. Therefore, in line with theories of individualization (Beck, 1992), historical improvements seem to be present mainly among those individuals who are able to shape their life according to their own plans. Historical changes may therefore come with larger social inequalities in positive affect over time.

Is There a Changing Nature of Retirement Adjustment?

Many authors argued that the context and the nature of retirement is changing (James, Morrow-Howell, Gonzales, Matz-Costa, & Riddle-Wilder, 2020; Mergenthaler, Cihlar, Micheel, & Sackreuther, 2017). Taken together, our results do not imply that such phenomena have strong effects on well-being across the retirement transition, at least in Germany in the investigated period (1996-2014). Retirees in later years differed in several aspects from earlier retirees, as for example the proportion of white-collar and highly educated workers increased. The context of retirement has changed as well. For example, the proportion of working retirees has increased. Nevertheless, later retirees seemed to be satisfied with their life to a similar degree as their predecessors, and post-retirement affect was very similar across groups, because historical differences in level and change in positive affect seem to have balanced each other out. Either the changes in the overall context of retirement are not as dramatic as some authors have assumed, or individuals are able to cope with their retirement life to a similar degree as earlier retirees were, potentially because of improved psychosocial resources.

Given that the context of retirement and late working life is changing, understanding how individuals master these new challenges and opportunities is an important task for future

studies (Henkens et al., 2018). As the role of control for pre-retirement positive affect seems to have become stronger with historical time, proactive adjustment behaviours initiated before retirement, for example searching for meaningful leisure activities (Henning, Stenling et al., 2021), or shaping one's work through job crafting (Kooij, Tims, & Kanfer, 2015) or employer changes if work ability had decreased at the last job (Garthe & Hasselhorn, 2021), may play an important role. Life span theories such as the life span theory of control (Heckhausen & Schulz, 1995) may help to guide future studies in understanding how individuals remain in control of their life during the last work years and the first years of retirement.

Strengths and Limitations

The present study is one of the first to investigate historical differences in retirement adjustment. Little is known about whether the way people deal with and adjust to retirement has changed with historical time. We further enrich the field by using longitudinal data, which allows us to understand if potential historical differences exist before retirement, or develop across the transition. Given that our samples differed in pre-retirement positive affect but were very similar in post-retirement positive affect, cross-sectional ratings of life in retirement may have missed such developments. The use of two components of subjective well-being is helpful given domain-specific differences in the reaction and adaptation to retirement (Luhmann et al., 2012). The use of nationally representative samples improves the generalizability of our results, at least for Germany.

One major limitation is the small sample size, which does not make it possible to detect very small historical differences. The long interval between measurements may further hide short-term developments (Pinquart & Schindler, 2007; Wetzel et al., 2016). It is possible that historical differences only occur in the so-called “honeymoon” phase directly after retirement (Atchley, 1976; Wetzel et al., 2016). We also could not include negative affect in our analyses. A further limitation is that our measure of perceived control is not a common

control scale and assesses mainly mastery, not perceived constraints, which more often show historical differences. Furthermore, the association between perceived control and life satisfaction may be bidirectional (cf. Hansson et al, 2020). Unfortunately, the control scale was not included in the DEAS in 2014, therefore we could not test for bidirectional associations. Moreover, because of our small sample, we did not differentiate between individuals with different pathways leading into retirement (Schmälzle et al., 2019). Furthermore, we only investigated the association of pre-retirement factors and change in well-being across retirement, although well-being and other individual-level factors may also contribute to retirement timing. For example, Segel-Karpas, Ayalon, and Lachman (2018) found that retirement was followed by worse mental health, but worse mental health also predicted retirement. Our data set does not allow for such complex models, as we have too few data points, but given the changes in the retirement context, the role of some factors (e.g., perceived control) for individual retirement timing may have become more important. In addition, we only focused on the role of perceived control, but there are other psychosocial factors that would be interesting to explore in future studies, such as partner dynamics, caregiver burden, cognitive performance, or views on aging (Luo & Li, 2021). Finally, our results may not be representative for other countries with different societal norms and governmental policies around retirement, as there are known differences between different countries concerning retirement adjustment (Fouquereau, Fernandez, Fonseca, Paul, & Uotinen, 2005; Richardson, Carr, Netuveli, & Sacker, 2018).

Conclusion and Outlook

The present study showed historical differences in pre-retirement positive affect and change in positive affect across retirement, but no historical differences in life satisfaction. Whereas the positive impact of the retirement transition itself may have diminished when it comes to positive affect, all in all, post-retirement subjective well-being does not seem to be

affected by historical time. This is important for research on retirement, because there have been strong changes in the overall context of retirement which may have affected individual adjustment. Nevertheless, research on retirement adjustment can benefit from taking historical context and macro-factors into account (Wang et al., 2011). Future studies should continue to investigate if and for whom late work life and retirement is changing with historical time, and the consequences this has for adjustment levels.

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Tables

Table 1. Descriptive Statistics.

	Retiring 1996- 2002 (<i>n</i> = 196)	Retiring 2002-2008 (<i>n</i> = 111)	Retiring 2008-2014 (<i>n</i> = 257)
Age at baseline	58.48 (2.22)	59.35 (2.61)	60.13 (1.90)
Gender (%)	Male = 53.06% Female = 46.94%	Male = 54.95% Female = 45.05%	Male = 45.91% Female = 54.09%
Education (%)	Low = 11.22% Middle = 56.63% High = 31.14%	Low = 4.50% Middle = 48.65% High = 46.85%	Low = 3.50% Middle = 49.03% High = 47.47%
Region	West = 57.14% East = 42.86%	West = 63.06% East = 36.93%	West = 65.37% East = 34.63%
Income (net-equivalence, corrected for inflation, €)	1,970.84 (920.79)	2,419.16 (1,196.11)	2,376.46 (1,635.25)
Pre-retirement Work Status (%)	Working = 64.25% Not working = 35.75%	Working = 71.17% Not working = 28.83%	Working = 62.50% Not working = 37.50%
Post-retirement Work Status (%)	Working = 5.10%	Working = 15.32% Not working = 84.68%	Working = 22.96% Not working = 77.03%

	Not working =		
	94.90%		
Years retired post-retirement (1-6)	3.19 (1.70)	3.18 (1.80)	3.11 (1.73)
Perceived control (<i>M (SD)</i> , range 1-4)	3.16 (0.49)	3.11 (0.40)	3.14 (0.44)
Multimorbidity (<i>M (SD)</i> , range 1-8)	2.47 (1.70)	2.17 (1.60)	1.84 (1.67)

Table 2. Measurement invariance.

	Life Satisfaction					Positive Affect				
	$\chi^2(df)$	CFI	TLI	RMSEA	SRMR	χ^2	CFI	TLI	RMSEA	SRMR
Configural measurement	146.070	0.963	0.938	0.065, 90%CI	0.048	641.114	0.929	0.906	0.051, 90%CI	0.063
invariance (MI)	(81)			[0.048;0.082]		(429)			[0.043;0.059]	
Weak MI across time	161.864	0.961	0.943	0.063, 90%CI	0.076	661.045	0.932	0.915	0.049, 90%CI	0.073
	(93)			[0.046;0.079]		(456)			[0.040;0.057]	
Weak MI across time and	165.358	0.963	0.951	0.058, 90%CI	0.084	684.345	0.930	0.916	0.049, 90%CI	0.082
groups	(101)			[0.042;0.074]		(474)			[0.040;0.056]	
Strong MI across time	185.261	0.959	0.951	0.058, 90%CI	0.086	716.669	0.928	0.918	0.048, 90%CI	0.084
	(113)			[0.043;0.073]		(501)			[0.040;0.056]	
Strong MI across time and	204.025	0.953	0.947	0.060, 90%CI	0.087	753.655	0.922	0.914	0.049, 90%CI	0.084
groups	(121)			[0.046;0.075]		(519)			[0.041;0.057]	

Table 3. Levels and Change in Life Satisfaction and Positive Affect (Final Models)

Life Satisfaction				
	Level ($M(SE)$)	Change ($M(SE)$)	Variance Level ($\sigma^2 (SE)$)	Variance Change ($\sigma^2 (SE)$)
Retiring 1996-2002	3.67 (0.04)***	0.13 (0.04)***	0.70 (0.11)***	0.72 (0.13)***
Retiring 2002-2008	3.67 (0.04)***	0.13 (0.04)***	0.49 (0.08)***	0.55 (0.08)***
Retiring 2008-2014	3.67 (0.04)***	0.13 (0.04)***	0.73 (0.09)***	0.39 (0.06)***
Model fit	CFI = 0.954, TLI = 0.951; RMSEA = 0.058, 90%CI[0.043;0.072]; SRMR = 0.090, $\chi^2(126) = 206.09$, $p < .001$			
Positive Affect				
	Level ($M(SE)$)	Change ($M(SE)$)	Variance Level ($\sigma^2 (SE)$)	Variance Change ($\sigma^2 (SE)$)
Retiring 1996-2002	3.05 (0.05)***	0.12 (0.04)**	0.28 (0.05)***	0.27 (0.05)***
Retiring 2002-2008	3.19 (0.03)***	0.03 (0.03)	0.18 (0.03)***	0.21 (0.05)***
Retiring 2008-2014	3.33 (0.04)***	-0.06 (0.03)*	0.24 (0.04)***	0.14 (0.03)***
Model Fit	CFI = 0.922, TLI = 0.915; RMSEA = 0.049, 90%CI[0.041;0.056]; SRMR = 0.084, $\chi^2(521) = 754.57$, $p < .001$			
* $p<.05$ ** $p<.01$ *** $p<.001$				

Figure 1. Change in Positive Affect Across Retirement

Figure 2. The Historically Increasing Association of Perceived Control and Positive Affect

Supplementary Materials.

Items Dispositional Hope Scale (Snyder et al., 1991)

Pathways

1. I can think of many ways to get the things in life that are most important to me.
2. I can think of many ways to get out of a jam.
3. Even when others get discouraged, I know I can find a way to solve the problem.
4. There are lots of ways around any problem.

Agency

1. I've been pretty successful in life.
2. I energetically pursue my goals.
3. I meet the goals that I set for myself.
4. My past experiences have prepared me well for my future.

Intercorrelation

Table S1. Intercorrelation of baseline variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	1											
2. Female gender	.07	1										
3. High Education	-.05	-.22***	1									
4. East German	-.14**	-.01	.19***	1								
5. Income	-.02	-.16***	.28***	-.24***	1							
6. Not working before retirement	.12**	.10*	-.14**	.11*	-.29***	1						
7. Working in retirement	.07	-.09*	.09*	-.05	.11**	-.12**	1					
8. Time in Retirement	-.55***	-.05	.01	-.01	.08	-.26***	.07	1				
9. Multimorbidity	.01	.01	-.07	.04	-.06	.11**	-.09*	.03	1			
10. Perceived Control	-.04	-.05	.10*	.00	.09*	-.05	.08	.01	-.18***	1		
11. Life Satisfaction	.00	.01	.03	-.07	.25***	-.10*	.03	-.03	-.20***	.54***	1	
12. Positive Affect	.06	.02	.19***	-.04	.16***	-.03	.15***	-.01	-.16***	.52***	.40***	1

Table S2. Model comparisons with an extended sample ($n = 681$)

	Life Satisfaction	Positive Affect
Same Change vs. Historical Differences	$\Delta\chi^2(1) = 0.38, p = .538$	$\Delta\chi^2(1) = 16.07, p < .001$
Same Level vs. Historical Differences	$\Delta\chi^2(1) = 0.66, p = .417$	$\Delta\chi^2(1) = 128.95, p < .001$
Same Variance in Change vs. Historical Differences	$\Delta\chi^2(1) = 10.09, p = .002$	$\Delta\chi^2(1) = 9.24, p = .002$
Same Variance in Level vs. Historical Differences	$\Delta\chi^2(1) = 0.00, p = .959$	$\Delta\chi^2(1) = 0.09, p = .767$

Gender Differences

We predicted level and change in subjective well-being by gender in all groups, and tested if allowing the effect to become stronger (or weaker) across groups led to a better model fit than setting the effect to be the same. Increasing or decreasing differences would show gender-specific historical developments. The results of model comparisons can be found in Table S3. There was no evidence for increasing or decreasing gender effects. There were no significant gender differences in life satisfaction (female gender $\rightarrow$ level: $B = 0.01$, $SE = 0.08$, $p = .872$; female gender $\rightarrow$ change: $B = 0.06$, $SE = 0.07$, $p = .368$) or positive affect (female gender $\rightarrow$ level: $B = -0.02$, $SE = 0.05$, $p = .683$; female gender $\rightarrow$ change: $B = 0.06$, $SE = 0.05$, $p = .182$).

Table S3. Model comparisons on the role of gender

	Life Satisfaction	Positive Affect
Same Change vs. Historical Differences	$\Delta\chi^2(1) = 0.26, p = .607$	$\Delta\chi^2(1) = -0.02, p = .999$
Same Level vs. Historical Differences	$\Delta\chi^2(1) = 0.06, p = .939$	$\Delta\chi^2(1) = 0.11, p = .737$

Table S4. Model fit comparisons, controlling for covariates

	Life Satisfaction	Positive Affect
Same change vs. historical differences in change	$\Delta\chi^2(1) = 2.88, p = .090$	$\Delta\chi^2(1) = 12.18, p < .001$
Same levels vs. historical differences in levels	$\Delta\chi^2(1) = 0.27, p = .605$	$\Delta\chi^2(1) = 14.20, p < .001$
Same effect of control on change vs. historical differences in the effect	$\Delta\chi^2(1) = 0.42, p = .519$	$\Delta\chi^2(1) = 1.51, p = .220$
Same effect of control on level vs. historical differences in the effect	$\Delta\chi^2(1) = 1.52, p = .218$	$\Delta\chi^2(1) = 6.99, p = .008$

Table S5. Effects of control and covariates on level and change in life satisfaction

	1996-2002		2002-2008		2008-2014	
	(n = 161)		(n = 97)		(n = 216)	
	Level	Change	Level	Change	Level	Change
Intercept	3.65 (0.08)***	2.99 (0.37)***	3.65 (0.08)***	2.99 (0.37)***	3.65 (0.08)***	2.99 (0.37)***
Level	-	-0.78 (0.09)***	-	-0.61 (0.17)***	-	-0.62 (0.07)***
Perceived control	0.99 (0.08)***	0.23 (0.09)*	0.99 (0.08)***	0.23 (0.09)*	0.99 (0.08)***	0.23 (0.09)*
Age	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Gender (Women = 1)	0.01 (0.02)	0.13 (0.06)*	0.01 (0.02)	0.13 (0.06)*	0.01 (0.02)	0.13 (0.06)*
Education	-0.14 (0.06)*	0.00 (0.05)	-0.14 (0.06)*	0.00 (0.05)	-0.14 (0.06)*	0.00 (0.05)
Region (East = 1)	-0.15 (0.12)	-0.09 (0.12)	-0.15 (0.12)	0.06 (0.16)	-0.15 (0.12)	-0.09 (0.12)
Not working before retirement	0.01 (0.02)	-0.08 (0.07)	0.01 (0.02)	-0.08 (0.07)	0.01 (0.02)	-0.08 (0.07)
Working in retirement	-0.07 (0.08)	-0.06 (0.08)	-0.07 (0.08)	-0.06 (0.08)	-0.07 (0.08)	-0.06 (0.08)
Time since retirement	0.00 (0.02)	-0.01 (0.02)	0.00 (0.02)	-0.01 (0.02)	0.00 (0.02)	-0.01 (0.02)
Multimorbidity	-0.06 (0.02)**	-0.04 (0.02)*	-0.06 (0.02)**	-0.04 (0.02)*	-0.06 (0.02)**	-0.04 (0.02)*
Income	0.02 (0.00)***	0.01 (0.00)*	0.02 (0.00)***	0.01 (0.00)*	0.02 (0.00)***	0.01 (0.00)*

* $p < .05$ ** $p < .01$ *** $p < .001$. Model fit: CFI = 0.933; TLI = 0.927; RMSEA = 0.049, 90%CI[0.038;0.058]; SRMR = 0.076.

Note. Income was divided by 100 to avoid large variances, which MPlus cannot handle.

Table S6. Effects of control and covariates on level and change in positive affect

	1996-2002 (<i>n</i> = 161)		2002-2008 (<i>n</i> = 97)		2008-2014 (<i>n</i> = 216)	
	Level	Change	Level	Change	Level	Change
Intercept	3.02 (0.06)***	2.18 (0.25)***	3.13 (0.05)***	1.51 (0.20)***	3.24 (0.06)***	0.85 (0.28)***
Level	-	-0.66 (0.08)***	-	-0.50 (0.07)***	-	-0.29 (0.08)***
Perceived Control	0.52 (0.09)***	0.02 (0.06)	0.66 (0.07)***	0.02 (0.06)	0.79 (0.08)***	0.02 (0.06)
Age	0.00 (0.01)	-0.01 (0.01)	0.00 (0.01)	-0.01 (0.01)	0.00 (0.01)	-0.01 (0.01)
Gender	0.03 (0.04)	0.11 (0.04)*	0.03 (0.04)	0.11 (0.04)*	0.03 (0.04)	0.11 (0.04)*
Education	0.08 (0.04)*	0.11 (0.04)**	0.08 (0.04)*	0.11 (0.04)**	0.08 (0.04)*	0.11 (0.04)**
Region (East = 1)	-0.09 (0.09)	-0.13 (0.08)	0.01 (0.08)	-0.08 (0.11)	-0.02 (0.06)	0.03 (0.07)
Not working before retirement	0.04 (0.05)	-0.15 (0.05)**	0.04 (0.05)	-0.15 (0.05)**	0.04 (0.05)	-0.15 (0.05)**
Working in retirement	0.08 (0.06)	0.05 (0.05)	0.08 (0.06)	0.05 (0.05)	0.08 (0.06)	0.05 (0.05)
Time since retirement	0.00 (0.02)	-0.02 (0.02)	0.00 (0.02)	-0.02 (0.02)	0.00 (0.02)	-0.02 (0.02)
Multimorbidity	-0.02 (0.01)	0.00 (0.01)	-0.02 (0.01)	0.00 (0.01)	-0.02 (0.01)	0.00 (0.01)
Income	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)

* $p < .05$ ** $p < .01$ *** $p < .001$. Model fit: CFI = 0.894; TLI = 0.886; RMSEA = 0.045, 90%CI[0.039;0.052]; SRMR = 0.088. *Note.* Income was divided by 100 to avoid large variances, which MPlus cannot handle.