Age, Cumulative (Dis)Advantage, and Subjective Well-Being in Employed and Unemployed Germans: A Moderated Mediation Model

Maria K. Pavlova and Rainer K. Silbereisen
Friedrich Schiller University Jena, Germany

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Author Note

Maria K. Pavlova, Jena Graduate School “Human Behaviour in Social and Economic Change” (GSBC), Friedrich Schiller University Jena, Germany; Rainer K. Silbereisen, Department of Developmental Psychology and Center for Applied Developmental Science (CADS), Friedrich Schiller University Jena, Germany.

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Correspondence concerning this article should be addressed to Maria K. Pavlova, Friedrich Schiller University Jena, Germany. E-mail: maria.pavlova(at)uni-jena.de
Abstract

The negative impact of unemployment on subjective well-being (SWB) is well known, but the role of age in this relationship remains unclear. We suggest that cumulative advantage (or disadvantage) associated with the duration of current employment status may produce an age-related divergence in SWB between employed and unemployed individuals. We used cross-sectional data on employed (n = 1382) and unemployed (n = 254) Germans (age 18–42) surveyed in 2005. We found that, among currently employed individuals, relatively older age predicted longer employment duration (tenure), which was related to higher SWB via higher income and higher perceived occupational security. Among currently unemployed individuals, age predicted longer unemployment duration, which was associated with lower SWB via lower perceived social support. Thus, age was indirectly related to higher SWB in employed individuals and to lower SWB in unemployed individuals. In this way, cumulative advantage of long-term employment and cumulative disadvantage of long-term unemployment contributed to the age-related divergence in SWB between employed and unemployed Germans already in the first half of working life.

Keywords: continuous employment, tenure, long-term unemployment, subjective well-being, cumulative disadvantage
Age, Cumulative (Dis)Advantage, and Subjective Well-Being

in Employed and Unemployed Germans: A Moderated Mediation Model

The detrimental impact of unemployment on mental health, including subjective well-being (SWB), is well known (e.g., McKee-Ryan, Song, Wanberg, & Kinicki, 2005; Paul & Moser, 2009), but it is less clear whether this negative effect is contingent on age. Several studies reported that middle-aged adults suffer from the psychological effects of unemployment more than younger adults (Breslin & Mustard, 2003; Broomhall & Winefield, 1990; Creed & Watson, 2003; Rowley & Feather, 1987; Seršić, Šverko, & Galešić, 2005; Warr & Jackson, 1984). This has been explained by middle-aged individuals having more family responsibilities and heavier financial obligations and by them being more committed to the work role compared to school leavers (Creed & Watson, 2003). Other studies, however, found no significant age differences (Hepworth, 1980; Kulik, 2001), and two recent meta-analyses even revealed age effects in the opposite direction (McKee-Ryan et al., 2005; Paul & Moser, 2009).

In many of these studies, the effects of age have been controlled for the length of unemployment, but apart from that, the relationship between age and the length of unemployment has not featured highly in research on unemployment and mental health. In the present study, we argue that this relationship is meaningful and deserves more attention. Specifically, we propose that it is the cumulative advantage and disadvantage associated with the length of employment and unemployment, respectively, that may lead to age-related disparities in mental health between employed and unemployed individuals.

Conceptual Model

The concept of cumulative disadvantage refers to the inequalities in the labour market and between the social classes that increase within the same birth cohort as individuals become older. Mechanisms of cumulative advantage and disadvantage include a higher rate
of return on larger initial resources ("success breeds success", "the rich get richer") and continuity produced by persistent exposure to a favourable or unfavourable condition, like childhood poverty (Merton, 1968; Elder, 1998; O’Rand, 2009). In organizational psychology, the first mechanism has received some attention in a series of studies showing that higher psychological resources present early in life, such as general mental ability and core self-evaluations, predict steeper career growth over many subsequent years (Judge & Hurst, 2008; Judge, Klinger, & Simon, 2010).

We draw on another mechanism of cumulative advantage and disadvantage, namely duration of exposure to a favourable or stressful condition (O’Rand, 2009; Willson, Shuey, & Elder, 2007). By definition, cumulation occurs over time, and the longer an individual stays in a situation that may enhance or deplete their resources, the greater the final benefit or loss may be. We argue that employed individuals who are older are likely to have been in continuous employment for longer than their younger counterparts and that this continuity may have enabled them to accumulate socioeconomic and psychosocial advantages, which may enhance their mental health. In turn, older unemployed individuals are more likely to be long-term unemployed than younger persons, and long-term unemployment is known to be related to resource depletion and increasing mental health impairment.

We consider SWB, whose conventional indicators are life satisfaction, positive affect, and negative affect (in our study, depressive symptoms), as an indicator of mental health. This construct represents the hedonic view of human well-being, which refers to the degree of subjective happiness irrespective of its sources (Diener, 1994). In our conceptual model (see Figure 1), age is understood as a correlate of cumulative processes that augment SWB in employed individuals but impair SWB in the unemployed. Thus, we consider employment status to be a moderator of the link between age and SWB and not vice versa, as in previous studies. Furthermore, we refer to the current spell of employment or unemployment: It is
reasonable to assume that the present status and its duration are most relevant for SWB as a summary of recent emotional states, which is sensitive to current events and whose stability is largely due to the consistency of past and present life circumstances (Diener, 1994).

Finally, we limit our analyses to the first half of working life (18–42 years of age). Although cumulative disadvantage has typically been studied with a broader age range (e.g., from childhood to old adulthood), the idea that such mechanisms start to operate early in life lies at the core of this theory (Merton, 1968; Miech & Shanahan, 2000). Accordingly, it is our intention to show that long-term stability of employment status, which is characteristic of the German labour market, may already be observed among relatively young individuals, with implications for their mental health. In the subsequent sections, we introduce the study setting and elaborate on specific paths hypothesized by the model.

<Insert Figure 1 about here>

The Sample Case of Germany

The German labour market is considered to be relatively rigid, with strong employment protection, low wage flexibility (because of collective wage bargaining), and high taxes and social security contributions (The Economist Intelligence Unit, 2008). The majority of German employees, to whom the above conditions apply, have permanent job contracts. The recent increase in temporary job agreements has mainly affected low-wage sectors and young people with limited work experience (Gebel & Giesecke, 2009). Job mobility is especially low among experienced employees, which is due to low voluntary turnover as well as to low rates of dismissal and redundancy (Dustmann & Pereira, 2008).

A downside of the stability of the German labour market is high structural unemployment. Our data refer to Germany in 2005, a period before full implementation of the Hartz reforms.1 At this time, the unemployment rate (based on registered unemployed) was 9.9% in the former West Germany and 18.8% in the former East Germany. Of those
unemployed, 34% in the West and 41% in the East had been out of work for more than a year (Bundesagentur für Arbeit, 2006). These strikingly high numbers could be partly explained by the generous pre-reform welfare system, whereby all payments received during unemployment were linked to prior earnings. Consequently, the benefits received by the long-term unemployed in Germany were among the largest in the OECD (Jacobi & Kluve, 2007).

Given the relatively low job mobility among the employed, and the low incentives for re-employment among the unemployed, many German workers stay in the same job, or remain unemployed, for years. (The latter point was especially true in the mid 2000s, since when unemployment rates have been decreasing as a result of the Hartz reforms.) In this context, age may be closely associated both with job tenure and with the length of unemployment.

**Hypothesis 1.** Age is positively related to the duration of current employment status (i.e., working with the present employer or the current spell of unemployment; see Figure 1).

**Consequences of Long-Term Unemployment and Long-Term Employment**

Several influential theories have been proposed to explain the adverse impact of unemployment on mental health. Jahoda (1981) emphasized the loss of latent benefits of employment (i.e., time structure, social contact, collective purpose, status, and activity) whereas Fryer (1986) argued that economic deprivation leading to agency restriction was the major risk factor associated with unemployment. Warr (2007) combined all these factors and specified additional advantages of paid work (supportive supervision, career outlook, and equity), a lack of which may impair mental health. Thus, it has been commonly assumed that the loss of resources and opportunities associated with employment accounts for the negative effects of unemployment (including long-term unemployment) on mental health.
As to empirical evidence, long-term unemployment has drawn more research than long-term employment, and they have seldom been considered together in one study (cf. Körner, Reitzle, & Silbereisen, in press, who, using the same dataset as for this study, compared the predictors of life satisfaction among employed, short-term unemployed, and long-term unemployed individuals). Long-term unemployment has been related to economic hardship, increasing health complaints, alcohol abuse, and mental health problems, which altogether lead to a lower probability of ultimately finding a job (Andersen, 2002; Freidl, Fazekas, Raml, Pretis, & Feistritzer, 2007; Hämäläinen et al., 2005; McKee-Ryan et al., 2005; Paul & Moser, 2009; Virtanen et al., 2008). The impact of long-term unemployment on mental health appears to be mediated by resource depletion (Andersen, 2002; Price, Choi, & Vinokur, 2002). In contrast, long-term employment, usually operationalised as remaining permanently employed irrespective of job changes, is reported to have buffering or even salutary effects on physical and mental health (Pavalko & Smith, 1999; Virtanen et al., 2008).

In the present study, we hypothesized that manifest and latent benefits of employment are accumulated during continuous employment and depleted during continuous unemployment (see Figure 1). We considered income as a manifest benefit (Fryer, 1986; Warr, 2007) that usually grows with work experience and job tenure, although the latter effect is rather small (Dustmann & Pereira, 2008). The reduction in income associated with long-term unemployment is well documented (e.g., Andersen, 2002).

**Hypothesis 2a.** Employment duration is positively related to income.

**Hypothesis 2b.** Unemployment duration is negatively related to income.

Concerning latent benefits, we looked at perceived occupational security (cf. career outlook, Warr, 2007) and perceived social support (cf. social contact, Jahoda, 1981). The former is usually assessed only in employed individuals; however, the unemployed also have a career outlook and evaluate their employment prospects (Mantler, Matejicek, Matheson, &
Anisman, 2005). Perceived occupational security may increase with job tenure, due to growing employment protection (The Economist Intelligence Unit, 2008), and decrease with longer unemployment duration as re-employment chances sink (Ljungqvist & Sargent, 2002).

**Hypothesis 3a.** Employment duration is positively related to perceived occupational security.

**Hypothesis 3b.** Unemployment duration is negatively related to perceived occupational security.

We expected the same pattern of associations with regard to overall perceived social support. This expectation was partly grounded on prior research; for instance, Harris, Winskowski, & Engdahl (2007) showed that workplace task support (conceptualized as a predictor) correlated with longer job tenure. In contrast, Creed & Moore (2006) found that unemployed individuals experienced a reduction in social support from significant others.

**Hypothesis 4a.** Employment duration is positively related to perceived social support.

**Hypothesis 4b.** Unemployment duration is negatively related to perceived social support.

**Implications for SWB**

The last part of our model specifies the links from the benefits accumulated during employment, or lost during unemployment, to SWB (see Figure 1). The importance of income, perceived occupational security, and perceived social support for SWB has been shown in earlier studies (Hellgren & Sverke, 2003; Heponiemi et al., 2006; Mentzakis & Moro, 2009). As the value of manifest and latent benefits of employment for mental health is presumably universal (Jahoda, 1981; Fryer, 1986; Warr, 2007), we did not expect substantial differences between employed and unemployed individuals in this regard.

**Hypothesis 5.** Income is positively related to SWB.

**Hypothesis 6.** Perceived occupational security is positively related to SWB.

**Hypothesis 7.** Perceived social support is positively related to SWB.
Finally, the following mediation hypotheses served to test the entire model.

**Hypothesis 8a.** In currently employed individuals, age is positively associated with SWB via employment duration and its accumulated advantages (higher income, higher perceived occupational security, and higher perceived social support).

**Hypothesis 8b.** In currently unemployed individuals, age is negatively associated with SWB via unemployment duration and its accumulated disadvantages (lower income, lower perceived occupational security, and lower perceived social support).

### Method

**Sample and Participants**

We used cross-sectional data from the Jena Study on Social Change and Human Development conducted in 2005 (Silbereisen et al., 2006). This survey, which investigated individual responses to social change, had its particular focus on the effects of growing uncertainty in various life domains on the normative transitions of young adulthood (e.g., school-to-work, marriage, and parenthood). Data were collected in October–December 2005 in four federal states of Germany, two from the East and two from the West. Sampling points were selected at random from a stratified area sample provided by the Association of German Market and Social Research Institutes (ADM). Within each sampling point, participants aged 16–42 were drawn via a random route technique; approximately 3000 interviews were conducted (response rate 77%). Unemployed individuals were somewhat over-represented whereas singles and foreigners were under-represented in this sample. Otherwise it was fairly representative of the same-age population of the respective federal states (Reitzle, 2008). Standardized face-to-face interviews lasting about an hour were carried out in German by the trained personnel of a field research company.

For the present study, we selected a subsample comprising working \((n = 1382)\) and unemployed \((n = 254)\) individuals. Minors, disabled persons, and those unemployed who had
never worked were excluded. Unemployment was defined in accordance with the criteria of the International Labour Organization: not working, looking for a job, and being able to accept a new job within two weeks. We preferred this criterion over that of being a registered unemployed because in 2005 all non-working and non-disabled Germans who had previously received social assistance were to be registered as unemployed to claim new welfare benefits. Mean age (SD) of the participants was 34.1 (6.8) years, age range 18–42 years. Participants from the former East Germany made up 49.3% of this subsample, females made up 50.2%.

Measures

Age and employment/unemployment duration. Age was calculated as the difference (in years, to two decimal places) between the interview date and the reported date of birth. Concerning employment duration, employed participants were asked to specify the number of years or months they had been working for their present employer. As to unemployment duration, unemployed participants were asked to specify the number of years or months since they had last been gainfully employed. Both measures of duration were coded in years; for duration of less than a year, the specified number of months was divided by 12, and duration of less than a month was coded as 0.07 years. Reported employment duration ranged from less than a month to 27 years, \( M (SD) = 6.9 (5.5) \) years. Reported unemployment duration ranged from less than a month to 19 years, \( M (SD) = 3.0 (3.3) \) years. Employment duration and unemployment duration were saved as one variable labelled status duration; in subsequent analyses, we used its interaction with employment status to test separately for the effects of employment and unemployment duration.

Benefits of employment. Net personal income was measured in Euros. Participants specified to which income bracket they belonged, and the mean of the upper and lower bounds was used. Perceived occupational security was assessed with an inverse coded scale on work-related demands (see Tomasik & Silbereisen, 2009). The scale referred to growing
uncertainty in the labour market (e.g., “It has become more difficult to plan my career path”; 1 = does not apply at all; 7 = fully applies; six items, $\alpha = .88$). Three items had slightly different formulations for employed and unemployed participants (e.g., “Considering the past 5 years, the risk of losing my job //not finding a new job// has increased”). Overall (i.e., not specific to work or any other domain) perceived social support was measured with six items from the Berlin Social Support Scales (Schulz & Schwarzer, 2003; e.g., “When I am worried, there is someone who helps me”; 1 = does not apply at all; 7 = fully applies; $\alpha = .93$).

**Subjective well-being.** General life satisfaction was measured with a single item (“How satisfied are you at present with your life altogether?”; 1 = very dissatisfied, 7 = very satisfied). The 10-item positive affect subscale of the PANAS (Watson, Clark, & Tellegen, 1988) involved ratings of how often participants had experienced certain positive emotions within the last month (e.g., “enthusiastic”; 1 = never, 7 = very often; $\alpha = .90$). Depressive symptoms were measured with the five-item subscale of the Brief Symptom Inventory (Derogatis, 1993) assessing prevalence of the symptoms in the last month (e.g., “feeling hopeless about the future”; 1 = not at all, 7 = very strongly; $\alpha = .89$). In subsequent analyses, we used latent score on SWB, which had three observed indicators: single-item life satisfaction and mean scores on positive affect and depressive symptoms. The measurement model with only three observed indicators was saturated (i.e., it had zero degrees of freedom, and its fit could not be estimated), but as all factor loadings were significant at $p < .001$, we concluded that a latent variable approach was warranted.

**Control variables.** Age-related divergence in SWB between employed and unemployed individuals may be partly accounted for by other sociodemographic variables. The unemployed, especially the long-term unemployed, often have low levels of education, and cumulative disadvantage related to low educational attainment is well known (e.g., Miech & Shanahan, 2000). Moreover, workers with dependent family members enjoy
stronger employment protection than single, childless workers (Buchholz & Kurz, 2008), and emotional benefits of having a family may inflate age-related disparities in SWB between employed and unemployed individuals (Helliwell & Putnam, 2005). For these reasons, we controlled our analyses for school attainment (8 years, 10 years, or 12-13 years of schooling), partnership status (0 = not cohabiting with a partner, 1 = cohabiting with a partner, irrespective of legal status), and parenthood (0 = no own children, 1 = has own children). In addition, we controlled for region (0 = West, 1 = East) and gender (0 = male, 1 = female) as their correlations with unemployment duration (it was longer on average in the East and among females) could confound its effects on the mediating variables and SWB.

**Analytical Approach**

To test our hypotheses about the differential effects of age on SWB and their mediators in employed and unemployed individuals, we needed to combine statistical mediation and moderation (for their classical definitions, see Aiken & West, 1991; Baron & Kenny, 1986). We employed a path-analytical framework for moderated mediation suggested by Edwards and Lambert (2007), which is based on testing the differences in simple paths, total, direct, and indirect effects between the levels of a moderator variable. That is, we estimated regression equations corresponding to the different paths specified by our model (see Figure 1), such that each path was allowed to vary between employed and unemployed individuals (i.e., we included interaction effects between each subsequent predictor and employment status). In this way, we could test the predicted differences, and detect any that had been unexpected, between the two groups. Supplemental Material 1 provides a full account of regression equations underlying our model.

Due to unavoidable constraints on the number of parameters in the model, we estimated separate models for each benefit of employment (i.e., income, perceived occupational security, and perceived social support). Analyses were conducted with Mplus.
v.6 (Muthén & Muthén, 2010), wherein missing values on dependent variables and covariates were estimated with a FIML algorithm, which makes distributional assumptions. We therefore used logged scores on the observed variables with a relatively large number of missing values (income, perceived occupational security, and perceived social support) to reduce non-normality of their distributions. In addition, all continuous predictors involved in the interaction effects were mean-centred (except for status duration, which represented a different measure for employed and unemployed participants, and its grand mean across the two groups was not a meaningful value). As tests of mediation involved estimating the products of regression coefficients, bias-corrected bootstrap confidence intervals were obtained for all regression coefficients and indirect effects (see Edwards & Lambert, 2007).

**Results**

Before testing our model statistically, we checked whether patterns observed in the data were at all supportive of our hypotheses. We plotted raw scores on the three SWB indicators against age (see Figure 2, left panels) and status duration (see Figure 2, right panels) separately for employed and unemployed participants. According to these plots, age appeared to be negatively associated with SWB in the unemployed, but it was virtually unrelated to SWB in the employed. That is, for each SWB indicator, an age-related divergence in SWB between currently employed and currently unemployed individuals could be observed. Moreover, the divergence between the employed and the unemployed increased with status duration: Long-term unemployed participants had apparently lower SWB than short-term unemployed, and individuals working with the same employer for a long time seemed to report slightly higher SWB than the recently employed. Thus, there was a close correspondence between age- and duration-related differences in SWB, especially among unemployed individuals, which was in line with our model.

<Insert Figure 2 about here>
Bivariate correlations among the study variables are provided as Supplemental Material 2. Results of regression analyses predicting the mediating variables are shown in Table 1, and results for the outcome variable (SWB) are given in Table 2. Estimates of each path specified by our model, calculated for employed and unemployed individuals separately (i.e., simple effects), are shown in Table 3. In the following, we will present our results in the order of hypotheses, proceeding from single paths to a test of the entire model.

**Age and Employment/Unemployment Duration**

As expected, age was a significant predictor of status duration; however, this association differed between employed and unemployed individuals, as evinced by a significant interaction between age and employment status (see Table 1). That is, in line with Hypothesis 1, relatively older employed individuals reported longer employment duration, and relatively older unemployed individuals reported longer unemployment duration, but the former effect was significantly larger than the latter (see Table 3, Path 1). In addition, the significant negative first-order effect of being unemployed (see Table 1) indicated that the duration of employment was longer on average than that of unemployment.

Insert Table 1 about here

**Employment/Unemployment Duration and Benefits of Employment**

The first-order effect of status duration on income and its interaction with employment status were both significant (see Table 1). Specifically, employment duration was significantly and positively associated with income, whereas unemployment duration was also significantly, but negatively, related to income (see Table 3, Path 2). Thus, both Hypothesis 2a and Hypothesis 2b were supported. Other significant predictors of higher income were being employed (i.e., a baseline difference between employed and unemployed individuals at the hypothetical zero value of status duration and at mean age), higher school
attainment, not cohabiting with a partner, living in the former West Germany, and being male (see Table 1).

The first-order effect of status duration on perceived occupational security, but not its interaction with employment status, was significant (see Table 1). Employment duration was significantly and positively associated with perceived occupational security (see Table 3, Path 3), which was in line with Hypothesis 3a. However, unemployment duration had no relation to perceived occupational security, which was against Hypothesis 3b. The difference between employed and unemployed individuals in the effects of status duration was not significant either. Other significant predictors of perceived occupational security were younger age, being employed (at zero status duration and at mean age), higher school attainment, and living in the former West Germany (see Table 1).

<Insert Table 2 about here>

The first-order effect of status duration on perceived social support was not significant whereas its interaction with employment status was significant (see Table 1). Contrary to Hypothesis 4a, employment duration was not associated with perceived social support (see Table 3, Path 4). Nevertheless, unemployment duration was significantly negatively related to perceived social support, which confirmed Hypothesis 4b. Moreover, the difference between employed and unemployed individuals in the effects of status duration was significant. Other significant predictors of perceived social support were younger age, higher school attainment, cohabiting with a partner, having own children, living in the former East Germany, and being female (see Table 1).

**Benefits of Employment and SWB**

As Table 2 (Model 1) shows, the first-order effect of income on SWB and its interaction with employment status were both significant. In particular, income was strongly positively related to SWB among employed individuals, but it was not significantly related to
SWB among unemployed individuals (see Table 3, Path 5). Consequently, Hypothesis 5 was only supported for the employed. With regard to perceived occupational security (see Table 2, Model 2) and perceived social support (see Table 2, Model 3), both were significantly and positively related to SWB, and these associations did not differ between employed and unemployed individuals (see also Table 3, Paths 6 and 7). Thus, Hypotheses 6 and 7 were unequivocally supported. Other significant predictors of higher SWB were younger age, being employed (at zero status duration and at mean age), higher school attainment, cohabiting with a partner, living in the former West Germany, and being male (see Table 2). Notably, the interaction between employment status and its duration remained significant in all models, which made sense as we had included only one mediator of the link between employment/unemployment duration and SWB in each model.

<Insert Table 3 about here>

**Testing the Moderated Mediation Model**

The bottom half of Table 3 shows the total, indirect, and direct effects of age on SWB separately among employed and unemployed individuals, as well as the differences between the two groups. The total effect of age on SWB (i.e., the sum of all direct and indirect effects) was negative both in employed and in unemployed individuals, but in the latter group it was significantly stronger: Relatively older employed persons reported only slightly lower SWB than their younger counterparts, whereas the older unemployed reported substantially lower SWB than the younger unemployed. Thus, the age-related divergence in SWB between currently employed and currently unemployed individuals was significant and in the expected direction (conforming to the patterns observed in the raw data, see Figure 2).

Further, among employed participants, age had a positive indirect effect on SWB via employment duration and income, and via employment duration and perceived occupational security (see Table 3), which was in line with Hypothesis 8a. However, the indirect effect of
age via employment duration and perceived social support was not significant. Thus, Hypothesis 8a was not corroborated with regard to the role of perceived social support as a benefit to be accumulated during continuous employment. In contrast, among the unemployed, age had a negative indirect effect on SWB via unemployment duration and perceived social support, which confirmed Hypothesis 8b. However, the indirect effects of age via unemployment duration and income or perceived occupational security were not significant, so this part of Hypothesis 8b was not supported.

Notably, the total indirect effects of age on SWB via employment duration and via unemployment duration were of about the same size: .008 and -.009, respectively (derived from the estimates given in Table 3). This suggested that, in terms of effect sizes, the advantage associated with long-term continuous employment was comparable to the disadvantage associated with long-term unemployment. After the indirect effects had been partialled out, the direct effect of age on SWB remained negative both in the employed and in the unemployed but no longer differed significantly between them (see Table 3, the bottom row). Thus, the age-related divergence in SWB between employed and unemployed participants (i.e., a significant difference in the total effect of age) was fully accounted for by employment and unemployment duration.

**Discussion**

The role of age in the relationship between unemployment and well-being has been disputed due to inconsistent research findings (Breslin & Mustard, 2003; Broomhall & Winefield, 1990; Creed & Watson, 2003; Hepworth, 1980; Kulik, 2001; McKee-Ryan et al., 2005; Paul & Moser, 2009; Rowley & Feather, 1987; Seršić et al., 2005; Warr & Jackson, 1984). Drawing on the concept of cumulative disadvantage (Merton, 1968; Elder, 1998; O’Rand, 2009), we argued that disparities in SWB between the employed and the unemployed may increase with age because of the typically longer duration of current
employment status among relatively older individuals. That is, continuous employment with the same employer enables individuals to accumulate certain benefits, whereas long-term unemployment is related to resource depletion. To test this proposition, we used cross-sectional data on young and middle-aged German adults (age 18–42) surveyed in 2005. Figure 3 shows to what extent our conceptual model was supported by the data.

We found that, after a number of sociodemographic variables had been controlled for, age was negatively related to SWB in both currently employed and currently unemployed individuals. This agreed with prior research showing that the association between age and well-being follows a U-shaped curve, with middle-aged individuals reporting the lowest levels of well-being (Blanchflower & Oswald, 2008). Further, in our study, the divergence in SWB between currently employed and currently unemployed individuals was significantly larger among middle-aged than among young German adults. That is, the age-related decrease in SWB seemed to be steeper among the unemployed than among the employed.

Several steps of mediation linked age with relatively higher SWB among employed and with relatively lower SWB among unemployed participants (see Figure 3). First, age was moderately associated with longer employment duration and considerably weaker, but nevertheless significantly, related to longer unemployment duration. These findings indicate that, fortunately, being unemployed in Germany is a much less stable condition than being continuously employed with the same employer. Indeed, despite the ongoing liberalization of the labour market, permanent job contracts are still the most widespread form of employment relationships in Germany (Gebel & Giesecke, 2009). After a period of apprenticeship or university studies, young Germans strive for a permanent position with a strong protection against dismissal (Buchholz & Kurz, 2008). Once obtained, this is not something they are likely to abandon in favour of another, given the low incentives for job mobility (Dustmann
& Pereira, 2008). Thus, becoming an insider of the German labour market often means establishing a continuous, long-term employment relationship, which appears to have important psychosocial advantages.

Specifically, we showed that long-term employment with the same employer was related to higher income (i.e., a manifest benefit) and higher perceived occupational security (cf. Warr, 2007). The latter effect was clearly due to German employment protection regulations taking tenure into account (The Economist Intelligence Unit, 2008). In turn, both income and perceived occupational security were related to higher SWB among employed individuals, indicating cumulative advantage associated with long-term employment. However, contrary to our expectations, employment duration was not associated with perceived social support, although social contact has been listed among the latent benefits of employment (Jahoda, 1981). It is possible that long-term continuous employment enhances only workplace support, which was not captured by our generic measure.

While some German labour market entrants manage to obtain a permanent position and start to accumulate respective advantages, those who are not so successful continue in precarious employment relationships or are even channelled into long-term unemployment (Buchholz & Kurz, 2008), which may exacerbate their comparative disadvantage. Nevertheless, in our data, unemployment duration was not associated with as many psychosocial disadvantages as expected (cf. Fryer, 1986; Jahoda, 1981). This fits with meta-analytic findings showing that the negative impact of unemployment on mental health is weaker in affluent countries with strong unemployment protection (Paul & Moser, 2009; cf. Ervasti & Venetoklis, 2010). For instance, in our study, income was negatively related to unemployment duration, as predicted, but it was not significantly associated with SWB in the unemployed. One reason for this may be that the variability in income was lower in the unemployed ($SD_{employed} = 726.8$ Euros; $SD_{unemployed} = 493.6$ Euros), which may point to a
comparable living standard within this group ensured by generous unemployment benefits (Jacobi & Kluve, 2007). Furthermore, unemployment duration was unrelated to decreases in perceived occupational security, over and above the mere fact of being unemployed. Perhaps the short-term unemployed exaggerate the severity of their situation under the shock of job loss, and although objective labour market chances diminish with increasing unemployment duration (Ljungqvist & Sargent, 2002), this is not reflected in subjective evaluations of occupational security.

The single factor contributing to the negative relationship between long-term unemployment and SWB was a lack of perceived social support. Specifically, longer unemployment duration was significantly related to lower perceived social support, which was strongly associated with SWB. Indeed, reduced social support has been considered one of the major risks associated with unemployment (Creed & Moore, 2006; Jahoda, 1981; Warr, 2007), and the long-term unemployed in particular may experience not only narrowing of social contacts but also censure and estrangement from close friends and relatives.

Several aspects of these findings are noteworthy. Firstly, age-related disparities in SWB between currently employed and currently unemployed Germans seem to be driven by both cumulative advantage of long-term continuous employment and cumulative disadvantage of long-term unemployment. Secondly, such cumulative advantage and disadvantage are already apparent in the first half of working life, albeit the resulting age-related divergence in SWB that we found is by no means large. Thirdly, although the adverse psychological impact of unemployment has usually been explained through the loss of manifest and latent benefits of employment (Jahoda, 1981; Fryer, 1986; Warr, 2007), it appears that the disadvantages of long-term unemployment are not simply the opposite of the advantages of long-term employment. Finally, these points might be more or less specific to
the German labour market in the mid 2000s, with long-term employment stability enjoyed by its insiders and relative economic security provided by the welfare system for its outsiders.

**Limitations**

The major limitation of this study was its cross-sectional design, whereas hypotheses about mediation are presumed to reflect causal mechanisms (Baron & Kenny, 1986). However, the direction of effects suggested by our model seemed to be well grounded. Age could be a predictor of employment/unemployment duration, but not vice versa. In turn, employment/unemployment duration, measured retrospectively, could serve as a predictor of accumulated advantages/disadvantages and SWB, referring to the present time. As to income, occupational security, and perceived social support, they have all been shown to influence SWB or mental health in general prospectively (Hellgren & Sverke, 2003; Heponiemi et al., 2006; Mentzakis & Moro, 2009), although bidirectional effects are also possible (Gorgievski-Duijvesteijn, Bakker, Schaufeli, & van der Heijden, 2005).

To investigate cumulative advantage and disadvantage associated with long-term employment and unemployment, we compared young and middle-aged German adults. However, it may be more appropriate to study the mechanisms of cumulative disadvantage, as well as psychosocial consequences of unemployment, across a wider age range. For instance, Warr and Jackson (1984) showed that impairment in mental health was greater among middle-aged than among both younger and older unemployed individuals. As findings from our study refer only to the first half of working life, there are corresponding limitations with respect to generalizability.

Other limitations pertain to our measures. Status duration was assessed retrospectively (which is a valid method with factual data; Rutter, Maughan, Pickles, & Simonoff, 1998) and only for the current employment status. That is, employment duration referred to the length of employment with the present employer. We checked that this
measure performed better than total years of gainful employment, another measure available in the dataset, but one that was too strongly related to age and only weakly related to SWB, so that it could not serve as a mediator of age effects. We also made sure that the effects of employment duration were not driven by the self-employed (e.g., farmers, whose stable occupation in a natural environment may enhance their SWB).

Regarding unemployment duration, participants were asked to specify when they had worked for the last time. Thus, someone who had been caring for a child for several years and was currently looking for a job would have been counted as a long-term unemployed person. However, this could only lead to an underestimation of the effects of unemployment duration as being outside the labour market is less detrimental for mental health than unemployment (Paul & Batinic, 2010). Concerning the measurement error in other variables, which could reduce power to detect interaction effects (Edwards, 2009), we used a latent score on the outcome variable (SWB), and other scales had a very high reliability (> .8).

Finally, perceived occupational security might tap into different constructs in employed individuals as compared to the unemployed, which could obscure our results. However, the items administered to these two groups were almost identical. They aimed at a broad assessment of one’s labour market chances and career prospects over the past five years, which could only be influenced by the current employment status of the participants to a certain extent (cf. Mantler et al., 2005).

**Future Directions**

Longitudinal studies would help in tracking the cumulative processes pertinent to SWB, as well as in identifying selection effects, across multiple transitions into and out of employment or from one job to another, something we were not able to do. In particular, more evidence on cumulative advantage associated with job tenure or uninterrupted employment is needed, and the quality of workplace experiences has to be taken into account.
Moreover, other potential mechanisms of age-related effects of unemployment have been put forward in the literature, such as the centrality of the work role in middle adulthood (Creed & Watson, 2003). In the present study, we found no evidence that such mechanisms play a role, but we did not address them explicitly, so this issue should be tackled in future research. Further, juxtaposing the effects of long-term employment and long-term unemployment in other sociopolitical contexts (e.g., more flexible Anglo-Saxon labour markets) may be of interest. Ongoing policy change in Germany (i.e., the Hartz reforms; see Jacobi & Kluve, 2007) may decrease the prevalence of long-term unemployment, but imposing heavier financial penalties on the long-term unemployed may take its toll on mental health. The divergence from employed individuals may then become even more pronounced, which warrants a new study.

**Conclusions**

Despite this study’s limitations, we were able to show that, in the context of high labour market stability, the age-related divergence in SWB between currently employed and currently unemployed individuals may result from cumulative advantage and disadvantage associated with the length of employment and unemployment, respectively. Furthermore, we shed light on psychosocial advantages of long-term continuous employment, demonstrating that they are not necessarily the polar opposites of the disadvantages of long-term unemployment. Our findings reflect the situation of young and middle-aged adults in the German insider–outsider labour market before the ongoing liberalization and activation policies have been fully implemented. In this setting, the concept of cumulative disadvantage proved to be useful for understanding the relationships between age, employment status, and SWB. Future research should address the applicability of this approach to older workers and in other sociopolitical contexts.
References


Footnotes

1 “The resulting Hartz reforms – named after the chairman heading the independent expert commission that worked out the blueprint for the reform package . . . are considered the most far-reaching reform endeavour in the history of the German welfare state, and consist of four laws . . . that were implemented step by step . . . The laws contain a set of specific policy measures that merge to a three-part reform strategy: (a) improving employment services and policy measures, (b) activating the unemployed, and (c) stimulating employment demand by deregulating the labour market.” (Jacobi & Kluve, 2007, p. 46)
Table 1

Regression Results for the Mediating Variables

<table>
<thead>
<tr>
<th>Predictors</th>
<th>DV: Status duration</th>
<th>DV: Income</th>
<th>DV: Perceived occupational security</th>
<th>DV: Perceived social support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.402** [.370, .438]</td>
<td>.002 [-.002, .005]</td>
<td>-.006* [-.013, -.001]</td>
<td>-.006* [-.010, -.001]</td>
</tr>
<tr>
<td>Unemployed</td>
<td>-3.577** [-4.072, -3.074]</td>
<td>-.410** [-.501, -.321]</td>
<td>-.382** [-.469, -.266]</td>
<td>-.035 [-.128, .045]</td>
</tr>
<tr>
<td>Age x Unemployed</td>
<td>-.258** [-.319, -.197]</td>
<td>.007 [-.001, .016]</td>
<td>-.005 [-.015, .006]</td>
<td>.000 [-.010, .009]</td>
</tr>
<tr>
<td>Status duration</td>
<td>.017** [.014, .021]</td>
<td>.020** [.014, .025]</td>
<td>.003 [-.002, .008]</td>
<td></td>
</tr>
<tr>
<td>Status duration x Unemployed</td>
<td>-.044** [-.064, -.026]</td>
<td>-.020 [-.042, .000]</td>
<td>-.026** [-.040, -.009]</td>
<td></td>
</tr>
<tr>
<td>8 years of schooling</td>
<td>-.106** [-.151, -.061]</td>
<td>-.080** [-.137, -.019]</td>
<td>-.075** [-.129, -.017]</td>
<td></td>
</tr>
<tr>
<td>12-13 years of schooling</td>
<td>.213** [.164, .261]</td>
<td>.163** [.108, .231]</td>
<td>.003 [-.061, .052]</td>
<td></td>
</tr>
<tr>
<td>Cohabiting with a partner</td>
<td>-.067** [-.102, -.029]</td>
<td>.025 [-.033, .081]</td>
<td>.171** [.118, .217]</td>
<td></td>
</tr>
<tr>
<td>Has own children</td>
<td>-.007 [-.050, .037]</td>
<td>-.037 [-.096, .029]</td>
<td>.121** [.061, .176]</td>
<td></td>
</tr>
<tr>
<td>Lives in East Germany</td>
<td>-.167** [-.207, -.130]</td>
<td>-.098** [-.146, -.049]</td>
<td>.141** [.094, .190]</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>-.257** [-.293, -.226]</td>
<td>.011 [-.040, .061]</td>
<td>.126** [.082, .165]</td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>.280**</td>
<td>.496**</td>
<td>.204**</td>
<td>.137**</td>
</tr>
<tr>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
</tbody>
</table>

Note. $N = 1636$. DV = dependent variable. CI = bias-corrected bootstrap confidence intervals. Logged scores on income, perceived occupational security, and perceived social support were used.

*a Controlling for sociodemographic variables did not substantially change the effects of age, employment status, and their interaction on status duration.

*b Reference category: 10 years of schooling.

* $p < .05$. ** $p < .01$. 
### Table 2

**Regression Results for the Outcome Variable (SWB)**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>95% CI</td>
<td>$B$</td>
<td>95% CI</td>
<td>$B$</td>
<td>95% CI</td>
</tr>
<tr>
<td>Age</td>
<td>-.023**</td>
<td>[-.034, -.012]</td>
<td>-.018**</td>
<td>[-.029, -.008]</td>
<td>-.016**</td>
<td>[-.025, -.007]</td>
</tr>
<tr>
<td>Unemployed</td>
<td>-1.020**</td>
<td>[-1.411, -.678]</td>
<td>-.739**</td>
<td>[-1.105, -.439]</td>
<td>-.796**</td>
<td>[-1.076, -.540]</td>
</tr>
<tr>
<td>Age x Unemployed</td>
<td>-.018</td>
<td>[-.045, .006]</td>
<td>-.019</td>
<td>[-.046, .005]</td>
<td>-.020</td>
<td>[-.042, .002]</td>
</tr>
<tr>
<td>Status duration</td>
<td>.009</td>
<td>[-.001, .020]</td>
<td>.009</td>
<td>[-.001, .019]</td>
<td>.014**</td>
<td>[.005, .022]</td>
</tr>
<tr>
<td>Status duration x Unemployed</td>
<td>-.086**</td>
<td>[-.145, -.028]</td>
<td>-.071*</td>
<td>[-.134, -.015]</td>
<td>-.055*</td>
<td>[-.106, -.005]</td>
</tr>
<tr>
<td>Income</td>
<td>.495**</td>
<td>[.315, .666]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income x Unemployed</td>
<td>-.648**</td>
<td>[-1.046, -.225]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived occupational security</td>
<td></td>
<td></td>
<td>.470**</td>
<td>[.360, .585]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived occupational security x Unemployed</td>
<td></td>
<td></td>
<td>.012</td>
<td>[-.381, .398]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived social support</td>
<td></td>
<td></td>
<td></td>
<td>.902**</td>
<td>[.775, 1.034]</td>
<td></td>
</tr>
<tr>
<td>Perceived social support x Unemployed</td>
<td></td>
<td></td>
<td></td>
<td>.155</td>
<td>[-.160, .481]</td>
<td></td>
</tr>
<tr>
<td>8 years of schooling *</td>
<td>-.204**</td>
<td>[-.335, -.070]</td>
<td>-.216**</td>
<td>[-.344, -.084]</td>
<td>-.176**</td>
<td>[-.287, -.054]</td>
</tr>
<tr>
<td>Variable</td>
<td>B</td>
<td>CI</td>
<td>B</td>
<td>CI</td>
<td>p</td>
<td>CI</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------</td>
<td>------------------</td>
<td>-------</td>
<td>------------------</td>
<td>-------</td>
<td>------------------</td>
</tr>
<tr>
<td>12-13 years of schooling(^a)</td>
<td>.083</td>
<td>[-.046, .205]</td>
<td>.098</td>
<td>[-.028, .208]</td>
<td>.189**</td>
<td>[.083, .300]</td>
</tr>
<tr>
<td>Cohabiting with a partner</td>
<td>.507**</td>
<td>[.398, .627]</td>
<td>.485**</td>
<td>[.383, .597]</td>
<td>.296**</td>
<td>[.194, .412]</td>
</tr>
<tr>
<td>Has own children</td>
<td>.041</td>
<td>[-.078, .164]</td>
<td>.047</td>
<td>[-.070, .172]</td>
<td>-.068</td>
<td>[-.175, .041]</td>
</tr>
<tr>
<td>Lives in East Germany</td>
<td>-.014</td>
<td>[-.120, .093]</td>
<td>-.051</td>
<td>[-.148, .049]</td>
<td>-.202**</td>
<td>[-.291, -.110]</td>
</tr>
<tr>
<td>Female</td>
<td>.058</td>
<td>[-.046, .159]</td>
<td>-.060</td>
<td>[-.150, .038]</td>
<td>-.163**</td>
<td>[.248, -.082]</td>
</tr>
</tbody>
</table>

\(R^2\)                     | .395**| .415**          | .529**|               |

*Note. N = 1636. CI = bias-corrected bootstrap confidence intervals. Latent score on SWB and logged scores on income, perceived occupational security, and perceived social support were used.*

\(^a\) Reference category: 10 years of schooling.

\(* p < .05. ** p < .01.*
Table 3

Analysis of Simple Effects

<table>
<thead>
<tr>
<th>Simple effect</th>
<th>Employed</th>
<th></th>
<th>Unemployed</th>
<th></th>
<th>Difference</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>95% CI</td>
<td>$B$</td>
<td>95% CI</td>
<td>$B$</td>
<td>95% CI</td>
</tr>
<tr>
<td>Path 1: Age $\rightarrow$ Status duration</td>
<td>.402**</td>
<td>[.370, .438]</td>
<td>.144**</td>
<td>[.094, .194]</td>
<td>.258**</td>
<td>[.197, .319]</td>
</tr>
<tr>
<td>Path 2: Status duration $\rightarrow$ Income</td>
<td>.017**</td>
<td>[.014, .021]</td>
<td>-.026**</td>
<td>[-.047, -.009]</td>
<td>.044**</td>
<td>[.026, .064]</td>
</tr>
<tr>
<td>Path 3: Status duration $\rightarrow$ Perceived occupational security</td>
<td>.020**</td>
<td>[.014, .025]</td>
<td>.000</td>
<td>[-.023, .019]</td>
<td>.020</td>
<td>[.000, .042]</td>
</tr>
<tr>
<td>Path 4: Status duration $\rightarrow$ Perceived social support</td>
<td>.003</td>
<td>[-.002, .008]</td>
<td>-.023**</td>
<td>[-.037, -.008]</td>
<td>.026**</td>
<td>[.009, .040]</td>
</tr>
<tr>
<td>Path 5: Income $\rightarrow$ SWB</td>
<td>.495**</td>
<td>[.315, .666]</td>
<td>-.153</td>
<td>[-.549, .182]</td>
<td>.648**</td>
<td>[.225, 1.046]</td>
</tr>
<tr>
<td>Path 6: Perceived occupational security $\rightarrow$ SWB</td>
<td>.470**</td>
<td>[.360, .585]</td>
<td>.482**</td>
<td>[.132, .863]</td>
<td>-.012</td>
<td>[-.398, .381]</td>
</tr>
<tr>
<td>Path 7: Perceived social support $\rightarrow$ SWB</td>
<td>.902**</td>
<td>[.775, 1.034]</td>
<td>1.057**</td>
<td>[.771, 1.361]</td>
<td>-.155</td>
<td>[-.481, .160]</td>
</tr>
<tr>
<td>Age $\rightarrow$ SWB (total)</td>
<td>-.014**</td>
<td>[-.024, -.004]</td>
<td>-.052**</td>
<td>[-.075, -.032]</td>
<td>.038**</td>
<td>[.014, .060]</td>
</tr>
<tr>
<td>Age $\rightarrow$ SWB (indirect via status duration and)</td>
<td>.003**</td>
<td>[.002, .005]</td>
<td>.001</td>
<td>[-.001, .003]</td>
<td>.003*</td>
<td>[.001, .005]</td>
</tr>
</tbody>
</table>
income)

<table>
<thead>
<tr>
<th>Path</th>
<th>Coefficient 1</th>
<th>Coefficient 2</th>
<th>Coefficient 3</th>
<th>Coefficient 4</th>
<th>Coefficient 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age → SWB (indirect via status duration and perceived occupational security)</td>
<td>.001</td>
<td>[-.001, .003]</td>
<td>-.003**</td>
<td>[.005, .001]</td>
<td>[.001, .008]</td>
</tr>
<tr>
<td>Age → SWB (indirect via status duration and perceived social support)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age → SWB (direct)</td>
<td>-.022**</td>
<td>-.033, -.011</td>
<td>-.043**</td>
<td>[.021, .048]</td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 1636. CI = bias-corrected bootstrap confidence intervals. The direct effect of age was calculated as the total effect minus all indirect effects via status duration. Logged scores on income, perceived occupational security, and perceived social support were used.

* p < .05. ** p < .01.
Figure 1. The proposed conceptual model linking age, duration of the current spell of employment or unemployment, accumulated or lost benefits of employment, and SWB.
Figure 2. Observed age-related divergence in SWB between currently employed and currently unemployed (left panels) and observed divergence in SWB between long-term employed and long-term unemployed (right panels). Unadjusted mean scores on each SWB indicator are shown.
Figure 3. Empirical test of the conceptual model. Significant paths are shown as solid lines, nonsignificant paths are shown as dashed lines. Estimates of each path are given in Table 3.
Supplemental Material 1. Equations Underlying the Estimated Moderated Mediation Model

Extending the equations provided by Edwards and Lambert (2007) for the case with two successive mediators, we tested our moderated mediation model via estimating the following equations separately for each presumed benefit of employment (we take income as an example; sociodemographic control variables are omitted):

\[
\text{Status Duration} = a_{10} + a_{1X} \text{Age} + a_{1Z} \text{Unemployed} + a_{1XZ} \text{Age} \ast \text{Unemployed} + e_{M1}; \quad (1)
\]

\[
\text{Income} = a_{20} + a_{2X} \text{Age} + a_{2M1} \text{Status Duration} + a_{2Z} \text{Unemployed} + a_{2XZ} \text{Age} \ast \text{Unemployed} + + a_{2M1Z} \text{Status Duration} \ast \text{Unemployed} + e_{M2}; \quad (2)
\]

\[
\text{SWB} = b_{0} + b_{X} \text{Age} + b_{M1} \text{Status Duration} + b_{M2} \text{Income} + b_{Z} \text{Unemployed} + + b_{XZ} \text{Age} \ast \text{Unemployed} + b_{M1Z} \text{Status Duration} \ast \text{Unemployed} + + b_{M2Z} \text{Income} \ast \text{Unemployed} + e_{Y}. \quad (3)
\]

Here, \(a\) coefficients refer to the equations where the hypothesized mediator is the dependent variable, \(b\) coefficients refer to the equation where SWB is the dependent variable, and \(e\) signify error terms. The first numerical subscript of \(a\) coefficients refers to the number of the mediator (status duration is the first and income is the second mediator). Subscript 0 indicates the intercept, \(X\) refers to age, \(Z\) refers to employment status, \(M1\) refers to the first mediator, \(M2\) refers to the second mediator, and \(Y\) refers to the outcome.

Direct, indirect, and total effects of age on SWB can be obtained by substituting regression equations for the mediators (Equations 1 and 2) into Equation 3 and rewriting the latter in terms of simple paths:

\[
\text{SWB} = [b_{0} + b_{Z} \text{Unemployed} + (a_{10} + a_{1Z} \text{Unemployed})(b_{M1} + b_{M1Z} \text{Unemployed}) + (a_{20} + + a_{2Z} \text{Unemployed})(b_{M2} + b_{M2Z} \text{Unemployed}) + (a_{10} + a_{1Z} \text{Unemployed})(a_{2M1} + + a_{2M1Z} \text{Unemployed})(b_{M2} + b_{M2Z} \text{Unemployed})] + [(b_{X} + b_{XZ} \text{Unemployed}) + (a_{1X} + + a_{1XZ} \text{Unemployed})(b_{M1} + b_{M1Z} \text{Unemployed}) + (a_{2X} + a_{2XZ} \text{Unemployed})(b_{M2} + + b_{M2Z} \text{Unemployed}) + (a_{1X} + a_{1XZ} \text{Unemployed})(a_{2M1} + a_{2M1Z} \text{Unemployed})(b_{M2} +}
This reduced form equation represents the total effect of age on SWB as a compound term. The effect of age on status duration (the first mediator) is given by $a_{1X}$ for the employed and by $(a_{1X} + a_{1XZ})$ for the unemployed. The effect of status duration on income is given by $a_{2M1}$ for the employed and by $(a_{2M1} + a_{2M1Z})$ for the unemployed. The effect of income on SWB is given by $b_{M2}$ for the employed and by $(b_{M2} + b_{M2Z})$ for the unemployed. The indirect effect of age on SWB via status duration and income is given by the product $a_{1X}a_{2M1}b_{M2}$ for the employed and by the product $(a_{1X} + a_{1XZ})(a_{2M1} + a_{2M1Z})(b_{M2} + b_{M2Z})$ for the unemployed. The direct effect is given by $b_X$ for the employed and by $(b_X + b_{XZ})$ for the unemployed. Thus, for each effect of interest, the difference between the employed and the unemployed can be computed and tested for significance.
Supplemental Material 2. Bivariate Correlations Among the Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
<th>9.</th>
<th>10.</th>
<th>11.</th>
<th>12.</th>
<th>13.</th>
<th>14.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. East Germany</td>
<td></td>
<td></td>
<td>-.33</td>
<td>-01</td>
<td>.03</td>
<td>.10</td>
<td>-.04</td>
<td>-.02</td>
<td>-.23</td>
<td>-.10</td>
<td>.20</td>
<td>-.06</td>
<td>.08</td>
<td>.04</td>
</tr>
<tr>
<td>2. Female</td>
<td>.05</td>
<td>-15</td>
<td>.07</td>
<td>.03</td>
<td>.12</td>
<td>.08</td>
<td>-.07</td>
<td>-.35</td>
<td>-.01</td>
<td>.16</td>
<td>-.02</td>
<td>.00</td>
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<tr>
<td>3. 8 years of schooling</td>
<td>-.37</td>
<td>-.19</td>
<td></td>
<td>-.27</td>
<td>-.03</td>
<td>.02</td>
<td>-.01</td>
<td>-.02</td>
<td>-.06</td>
<td>-.09</td>
<td>-.13</td>
<td>-.07</td>
<td>-.13</td>
<td>.08</td>
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<tr>
<td>4. 12-13 years of school.</td>
<td>-.04</td>
<td>.05</td>
<td>-.18</td>
<td></td>
<td>-.01</td>
<td>-.01</td>
<td>.10</td>
<td>.02</td>
<td>.24</td>
<td>.16</td>
<td>.02</td>
<td>.09</td>
<td>.11</td>
<td>-.04</td>
</tr>
<tr>
<td>5. Has a steady partner</td>
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Note. Pairwise deletion of missing cases was employed. Coefficients above the diagonal refer to the employed (n = 1294-1382); coefficients below the diagonal refer to the unemployed (n = 239-254). The bottom line refers to correlations of employment status with all the other study variables in the whole sample (N = 1556-1636). Logged scores on income, perceived occupational security, and perceived social support were used. Coefficients significant at p < .05 are italicized, at p < .01 are in bold and italicized, at p < .001 are in bold.