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ORIGINAL RESEARCH

Heterogeneity in Trajectories of Life Satisfaction After Reunification: The Role of Individual Resources and Life Stage in Former East Germany

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Abstract
For people living in the former East Germany, reunification with the former West Germany fundamentally transformed the sociopolitical system and most domains of everyday life. Previous research has revealed temporal shifts in average life satisfaction after reunification in the former East German population as a whole, but so far little is known about heterogeneity in patterns of adjustment *within* the population. Building on evidence of considerable diversity in trajectories of adjustment to other critical life events, in the current study we use longitudinal data from the German Socio-Economic Panel Study and growth mixture models to identify typical yet distinct trajectories of life satisfaction among former East Germans, covering the period just before reunification and four years thereafter. We identified four trajectories: continuously satisfied (experienced by 17% of the sample), upward adjusters (24%), downward adjusters (34%), and continuously dissatisfied (25%). Results of logistic regression analyses indicate that the propensity to follow a particular trajectory was strongly predicted by an individual's baseline economic (employment, but not income), socio-relational (loneliness) and personal (education, satisfaction with health) resources. Whereas former East Germans with more resources just prior to reunification were more likely to maintain high or increase in life satisfaction, their peers with fewer resources were more apt to either maintain low or decrease in life satisfaction. People in their mid-twenties through mid-fifties (i.e., prime working age) at the time of reunification were also more likely to maintain low life satisfaction. Accordingly, reunification affected the unfolding of individual lives differently.

Keywords German reunification · Adjustment · Well-being · Critical life event · Life course · Growth mixture model

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1 Introduction

In November 1989, an entire population experienced the same life-changing event: Literally overnight, the Berlin Wall fell and, in October 1990—sooner than anybody might have expected—the two German states re-united. The subsequent transition from socialism to democracy and a market economy forced former East Germans to adjust to fundamentally different political, economic, and social circumstances and affected many domains of their everyday life (e.g., Mayer, 2006; Silbereisen, 2005).

How well did former East Germans adapt to reunification? Previous studies used life satisfaction, understood as a global evaluation of one's life compared to how life ought to be, as a suitable indicator of adjustment to critical life events (e.g., Diener et al., 2018; Infurna et al., 2017; Wang et al., 2011). For former East Germans, life satisfaction was high around the time of reunification, but then sharply declined and—despite a certain degree of rebound—eventually stagnated below the mean-level of the former West German population (e.g., Frijters et al., 2004a; Petrunyk & Pfeifer, 2016). However, because previous studies focused only on mean-level changes, to date little is known about potential *heterogeneity* in patterns of adjustment within the former East German population. It is crucial, however, to examine such heterogeneities to identify groups that are particularly vulnerable to challenges arising from critical life events, as well as groups that manage to adapt more successfully. Accordingly, we analyze the first years after reunification to identify typical, yet distinct trajectories of adjustment among former East Germans. In doing so, we focus on the individual adjustment to the critical life event of reunification, rather than on satisfaction with the—still ongoing—process of merging two societal systems. In a second step, we examine which characteristics distinguish these different groups, specifically focusing on an individual's resources and their life stage, to better understand who adjusted well to the reunification and who struggled with the new living conditions.

To do so, we built on evidence showing considerable diversity in trajectories of adjustment to other critical life events (e.g., Infurna et al., 2017; Wang et al., 2011) and apply Growth Mixture Models (GMM) to data from the German Socio-Economic Panel Study (SOEP). Our unique data allow us to examine trajectories of life satisfaction in a representative sample of former East German households between May/June 1990 (i.e., just prior to reunification) through 1994 (i.e., five years after the fall of the Berlin Wall). To examine associations between trajectory membership and life stage as well as resource indicators, we use logistic regression models (SOEP 2019).

2 Background

2.1 Life Satisfaction After German Reunification and Other Critical Life Events

Numerous studies have examined average trajectories of life satisfaction in East and West Germany after reunification, as well as some of its determinants (e.g., Easterlin & Plagnol, 2008; Frijters et al., 2004a; Noll & Weick, 2010; Petrunyk & Pfeifer, 2016; also see Bartolini et al., 2013). Overall, average life satisfaction in the former West German population remained remarkably stable; if anything, it slightly declined (at least through 2007; see Bartolini et al., 2013; Noll & Weick, 2010). In contrast, in the former East German population, average life satisfaction was relatively high in 1990 (albeit still below the Western

level) and decreased steeply in 1991. Apparently, the initial euphoria of reunification was quickly replaced by widespread disappointment. Average life satisfaction in the former East German population did, however, steadily increase throughout the mid to late 1990s, but then stagnated or even declined again around the turn of the millennium (Easterlin & Plagnol, 2008; Noll & Weick, 2010). Since the mid-1990s, a stable and considerable East–West gap continued to exist, with convergence observed only among younger birth cohorts (Petrunyk & Pfeifer, 2016). While results about average trajectories of life satisfaction have been highly informative for understanding the *overall* effect of reunification on the life satisfaction of the former East German population as a whole, they have been less informative about heterogeneity in patterns of adjustment *within* the population. However, information about heterogeneity is important because it can be used as an indicator of intra-cohort inequality (i.e. the structural component of life course development, see Dannefer, 2020) and to distinguish 'successful' from 'vulnerable' groups (i.e. individual capabilities for coping with critical life events; see Infurna & Luthar, 2016).

Previous research concerning other critical life events has demonstrated substantial diversity in how people adjust over time. Studies of how people adjust to widowhood, unemployment or retirement, for example, have found that considerable proportions of people do not or only slightly deviate from their personal long-term, typical level of life satisfaction. Rather, they experience either increases or decreases (e.g., Galatzer-Levy et al., 2010; Mancini et al., 2011; Pinquart & Schindler, 2007; Wetzel et al., 2016) and then often return to their previous level of life satisfaction within a few years (e.g., Anusic et al., 2014; Luhmann et al., 2012). Evidence from studies of critical life events would therefore suggest that people likewise followed different trajectories of adjustment after reunification. Indeed, it is widely accepted that the collapse of the former Communist states of Eastern Europe produced both'winners' and'losers' (e.g., Brainerd, 1998; Verhoeven et al., 2008; also see Gürtzgen & Diegmann, 2020), and one can hence assume that reunification was associated with improvements in life satisfaction for some people, and declines for others.

2.2 Adjustment Processes Depend on Resources and Life Stage

Resources—that is, positive internal and external attributes which are valuable in their own right but also increase the potential for accumulating other valuable assets (e.g., Hobfoll, 2002)—are key determinants of an individual's ability to cope with the cha(lle)nges associated with a critical life event and to adjust to new situations (e.g., Diener, 1984; Silbereisen, 2005; Wang, 2012; Wang et al., 2011). Based on the central principles of life course theory (Elder et al., 2004), Kim and Moen (2002) identified economic, social-relational, and personal resources as important for individuals' adjustment to critical life events such as retirement. *Economic resources* are often understood as the absence of economic hardship and financial difficulties in daily life. Noting that lives are interdependent, *social-relational resources* such as the emotional support of central interaction partners (e.g., spouse, children, friends) or engagement in social activities might help people to cope with negative emotions and establish new daily structures after a major life change. Finally, *personal resources* refer to internal resources such as health, psychological characteristics and socio-demographic characteristics. In particular, good health (e.g., Wang et al., 2011) and education (e.g., Wetzel et al., 2016) appear to be general resources that improve the probability of resilience and even improvements in well-being following retirement and critical life events in general. Adjustment

processes seem to depend mostly on resources at the time of the "shock" rather than on subsequent changes in these resources (e.g., Hansson et al., 2020; also see Silbereisen, 2005).

There is evidence that economic, social-relational and personal resources are important for predicting how people in former East Germany adjusted to reunification. Noll and Weick (2010) showed that former East Germans who were in the highest income quintile had trajectories of much higher life satisfaction (almost on par with former West Germans) than their peers with lower incomes. Other research has shown that education was key to "shielding off pronounced negative changes related to the post-transformation period in Germany" (Tomasik & Silbereisen, 2009: 25). Also, Frijters and colleagues (2004a) found that the increase in life satisfaction over the course of the 1990s was greatest among more highly-educated former East Germans.

Based on existing evidence on the importance of resources for adjustment to critical life events more generally and reunification specifically, we expect that how people in former East Germany adjusted to reunification over time depended on their resources at the beginning of the transition period (Hobfoll, 2002). Specifically, we expect that people with more economic, social-relational and personal resources at the beginning of the transition had a greater capacity to cope with the fundamental political, economic, and social changes associated with reunification (e.g., Silbereisen, 2005; Tomasik & Silbereisen, 2009), and hence a higher likelihood of experiencing positive trajectories of life satisfaction (i.e., stability of high life satisfaction and/or improvements).

How people adjusted to reunification may also depend on its biographical timing (see Elder et al., 2004; also Silbereisen, 2005), particularly with regard to their life stage vis-à-vis the labor market. The labor-market consequences of the collapse of the Communist regime were particularly difficult. Working age adults were forced to shift to completely new industries and/or adapt to new forms of workplace organization (see Goedicke, 2013 for an overview). The strain of adapting to changes in the work domain affected other domains of life as well, as indicated in particular by the delay of fertility (e.g., Goldstein & Kreyenfeld, 2011) and of divorce (e.g., Hummelsheim, 2009).

Arguably, people at the start, middle and end of their careers experienced the new labor market very differently. Pre-career and the youngest workers might have found it relatively easy to obtain (re-)training and new jobs. Generous early-retirement policies encouraged older workers to leave the labor market entirely, and retirees were spared the challenge of adapting to the new labor market. In contrast, adults with established careers received relatively little support for either adapting to or exiting the transformed labor market. The particularly difficult work situation of adults with established careers might explain why people who were in their mid-thirties to late 40s when the Communist regime collapsed retrospectively perceived more decline of subjective well-being in the public domains of their lives (work, standard of living, and housing) after the fall of the Berlin Wall relative to their older peers (younger adults were not included in the study; Westerhof & Keyes, 2006). Due to their particularly challenging circumstances, we expect that former East Germans who had already firmly established themselves on the labor market at the time of reunification (i.e., between mid-20s and mid-50s) had less favorable trajectories of life satisfaction (i.e., lower levels and/or decreases) than individuals in the other life stages.

2.3 Current Study

Little is known about potential heterogeneity in patterns of adjustment to reunification among former East Germans. In the current study we therefore use five waves of

representative data from SOEP and apply GMM to identify multiple common, yet distinct trajectories of life satisfaction following reunification. Because individuals tend to adjust to critical life events within just a few years (e.g., Anusic et al., 2014; Luhmann et al., 2012), we focus on life satisfaction between 1990 and 1994. Although we assume that the immediate adjustment process to reunification was more or less completed within this time frame, in no way do we suggest that reunification ceased to affect East Germans' lives in very diverse—for (some) better and for (some) worse—ways after 1994.

While the focus on heterogeneity is not only a question of substance, it is also a question of method. Statistical methods designed to identify an average trend (e.g., ANOVA, panel regression) treat heterogeneity as uncertainty or error. In contrast, analytical techniques such as GMM make it possible to explicitly detect heterogeneity by identifying multiple, distinct trajectories represented in the data. For the current case of life satisfaction trajectories, as they are data-driven, they can theoretically follow any pattern, e.g. stability, delayed rapid-changes, steady declines.

Moreover, aiming to contribute to a better understanding of the heterogeneity in adjustment trajectories, we predict the likelihood of following a particular trajectory with individuals' resources and life stage at reunification. The SOEP provides a broad array of information about (former) East Germans' economic (household income, paid employment), social-relational (having a partner, number of children, loneliness) and personal (health, education) resources as well as their life stage in May/June 1990 (i.e., just prior to reunification).

Based on evidence of diversity in trajectories of adjustment following other critical life events, we hypothesize that (1) we identify multiple trajectories of life satisfaction in the years after reunification. Based on evidence of the importance of resources for adjustment to reunification specifically (Silbereisen, 2005; Tomasik & Silbereisen, 2009) and critical life events more generally (Kim & Moen, 2002; Wang & Shi, 2014), we further hypothesize that (2) individuals with more economic, social-relational and personal resources in 1990 have more advantageous trajectories (i.e., stability of high and/or increases in life satisfaction). Finally, we hypothesize that (3) individuals in mid-careers' life stage show more disadvantaged trajectories than people in early or late life stages (cf. Elder et al., 2004).

3 Data and Methods

3.1 Data

The German Socio-Economic Panel Study (SOEP 2019; version 34) is an ongoing, representative household study which is conducted annually among all members of a selected household who are aged 16 and older. SOEP has been conducted since 1984 in former West Germany. After the fall of the Berlin Wall in November 1989, SOEP quickly prepared to conduct interviews in East Germany as well (see Goebel et al., 2019). The baseline survey was conducted from May to June 1990. Based on a random-route sampling procedure, a total of 4444 individuals in 2179 households were interviewed. In our analysis, we follow respondents for five waves (1990–1994) in order to observe them during the period crucial for adjusting to critical life events (see Luhmann et al., 2012). We used *Stata 16* to prepare the data and *MPlus* (Muthén & Muthén, 2010) and the Stata-ado *runmplus* (Jones, 2013)

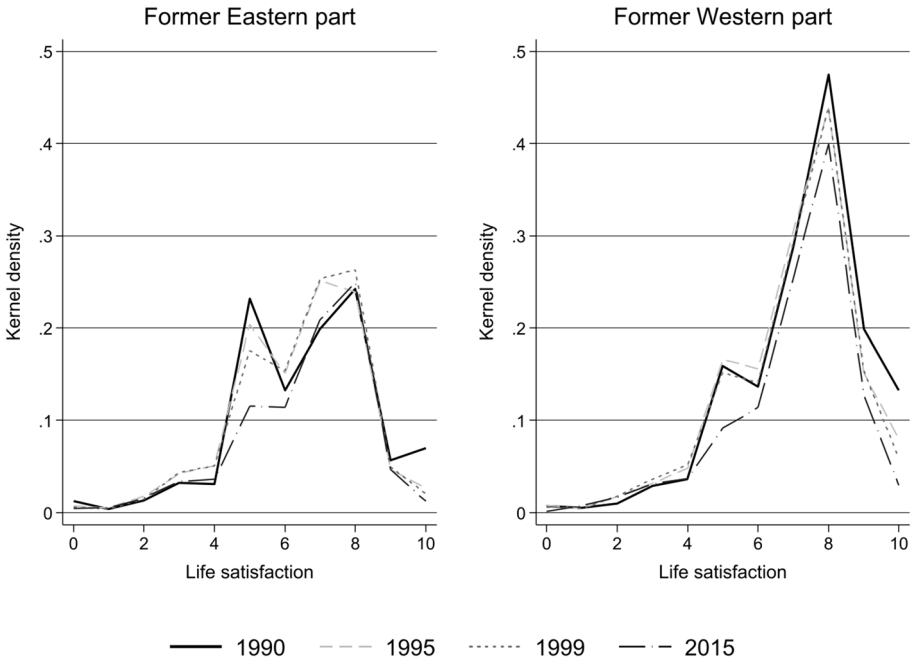

Fig. 1 Distribution of the item on general life satisfaction by measurement occasion and region. Source: SOEP version 34; own representation, East: $N_{1990} = 4444$, West $N_{1990} = 7035$

to conduct the analysis. The final graphs were plotted using the Stata-ado *coefplot* (Jann, 2014). Replication files are available at www.osf.io/wqpjb/.

The central *dependent variable* was life satisfaction, which was assessed with a single item (''How satisfied are you with your life, all things considered?''). Responses could range from 0 = "completely dissatisfied" to 10 = "completely satisfied." Extreme answers are rare but can nevertheless strongly impact study results. A validity study on this item (in comparison to the 7-point multi-item satisfaction scale) has shown that in this version extreme answers tend to be less associated with the scale and therefore, seem to be less valid (van Beuningen, 2012). Along the same line, respondents using simple responding techniques tend to answer in extreme and midpoint categories of the item (Diener et al., 2013). While there is some indication that over time respondents get more experienced with answering this survey question (Schimmack et al., 2010), extreme answers seem to be less reliable over the first observations.[1] Figure 1 shows the distribution of the life satisfaction scale at different measurement occasions. In particular in 1990, when most participants in former East Germany were arguably in contact with the scale and the interviewer for the first time in their lives, they more often selected extreme response options than both in later years and than respondents in former West Germany. Therefore, we excluded the lowest and highest 5 percent life satisfaction-assessments in our observation period (scores ≤ 3 and ≥ 9 respectively). This reduced the overall number of observations by

[1] Additionally, studies argue that social desirability might positively bias in face-to-face interviews first observations and that individuals tend to become more honest about their actual life satisfaction over time (Ehrhardt et al., 2000; Frijters and Beatton, 2012).

around 10 percent, while only 55 individuals (1.2%) who consistently indicated an extreme value were excluded. We present untrimmed results in the robustness check paragraph.

Independent variables included indicators of resources and life stage were all measured at baseline in 1990.[2] We used two indicators of economic resources. Monthly *net equivalized household income* is the total income of all household members divided by a weighted sum of the number of people living in the household. To account for nonlinear associations, we split responses into quintiles. We also included whether or not a person was *gainfully employed* to account for economic differences based on own employment and transfer income (both within the household or from the state). Social-relational resources were indicated by (not) *having a partner* and the *number of children* living in the household. We also included *loneliness* (i.e., a lack of social resources). Respondents indicated their agreement with a single item, "I often feel alone." Answers were dichotomized ("fully agree" versus a combined category including the responses "somewhat agree," "somewhat disagree," and "fully disagree"). Finally, we used two indicators of personal resources. *Satisfaction with health* was measured with a single item, "How satisfied are you currently with your health?" and a scale ranging from 0="not satisfied" to 10="very satisfied." *Education* was measured according to the International Standard Classification of Education. To simplify the analyses, we re-coded responses as either "low" (inadequate and general elementary), "medium" (middle vocational and vocational with A-level) or "high" (higher vocational or higher education). For *life stage*, we grouped individuals according to their age in 1990. As we were primarily concerned with individuals' life stage with respect to the labor market, we differentiated between individuals who were pre-career or labor market entrants (age 16 to 24), early career (age 25 to 39), mid-career (age 40–54), late career (and eligible for early retirement; age 55–64) and retirees (age 65 and older). Lastly, we controlled for gender because gender-specific policy changes might have affected the organization of gender relations in Germany and thereby also other unobserved variables predicting adjustment processes (Lang, 2017).

Missing data due to panel attrition or item non-response was relatively low. Over the 5-year observation period, attrition was only around 20 percent. In addition, we excluded data from 78 individuals (1.8%) due to item non-response on the satisfaction with health ($N=14$) and income ($N=64$) items in 1990. We used full-information maximum likelihood (FIML) estimators to handle panel attrition. FIML does not impute missing values but uses all available information to estimate parameters. Monte Carlo simulation studies have demonstrated that FIML largely reduces biases due to selective panel attrition if patterns of missing values are related to variables in the model (Graham, 2009; Little & Rubin, 2002).

3.2 Identifying Typical Trajectories

To identify typical trajectories of life satisfaction, we applied Growth Mixture Models (GMM; Wickrama et al., 2016). GMM is a specific type of Latent Class Analysis in which trajectories of a single outcome variable measured at multiple time points are clustered into latent classes characterized by a similar trajectory. Unlike Latent Growth Curve Models (also known as RE-panel regression models), GMM do not assume that all individuals are drawn from a single population with a common estimated average trajectory in

[2] We only used information of the baseline to avoid interference with potential changes in resources over time. However, this limited the number of potential indicators to the questionnaire of 1990, which strongly focused on the transitional experiences of the people living in East Germany.

which variation is expressed as unequal growth parameters and error terms. Rather, GMM assumes that subpopulations following distinct trajectories exist. This is particularly important for the current study as we expect to find distinct trajectories showing different forms of increases or decreases of life satisfaction (Kreuter & Muthén, 2008).

We specified that life satisfaction should be estimated entirely freely over time, similar to an ANOVA (see also Infurna & Luthar, 2016). This means that we used dummy variables for calender years, rather than specifying linear or curvilinear trajectories, for instance. Freely estimating the time variable is less parsimonious than, for instance, specifying either a linear or curvilinear time function. However, the unconstrained model "casts the widest net", that is, it maximizes the possibility of identifying any type of trajectories represented in the data (and not just, e.g., linear or curvilinear trajectories). We also allowed variances to be unequal across classes and time, which has been shown to reduce bias in the number of extracted classes (Infurna & Grimm, 2018). Since our model had many degrees of freedom, we assured replication of best likelihoods by using a high number of 10,000 initial starts (with 50 initial-stage iterations) and 1000 final-stage optimizations. Finally, GMM calculates the probability for each individual to belong to each of the identified classes. We sorted the individuals into the class for which *MPlus* had identified the highest probability.

To begin with, we estimated a GMM with two latent classes and then added additional classes one by one (up to the six-class solution because models with more classes did no longer converge successfully). For Latent Class Analysis in general and for GMM in particular, there are no hard criteria for determining how many classes best describe the data (Nylund et al., 2007). Subsequently, in order to decide on the best class solution, we considered five criteria: First, lower values on the Bayesian information criterion (BIC) represent better models in terms of goodness of fit and the number of parameters. Second, the Lo-Mendell-Rubin Test indicates whether including an additional class significantly improves model fit despite the associated increase in free parameters. Third, higher entropy (which ranges from 0 to 1) indicates that the classes are more clearly separated and that individuals fit well in their class. It is hence an indicator for classification accuracy. Fourth, the number of participants assigned to the smallest class should not be smaller than 5 percent of the total sample (Wickrama et al., 2016). Next to these statistical criteria, we, fifth, also considered whether the class solution was intuitively plausible and interpretable.

3.3 Characteristics Predicting Class Membership

To begin with, we calculate mean-level differences in resources and life stages between each of the identified classes using ANOVA for continuous and binary variables and χ^2-tests for discrete variables. Next, to assess whether resources and/or life stage affected the likelihood of following a particular trajectory, we use binary logistic regression analyses with each class as a single dependent variable and the resource indicators and life stage as independent variables. This analysis helps to understand which variables predict an individual's likelihood to follow a particular trajectory (or class, compared to other classes). The central sample selection unit of SOEP is the household; hence the observations are not independent. To avoid potentially underestimating the standard errors, we used clustered standard errors to control for the nesting of the data within households.

Logistic regression models usually provide parameters (e.g., odds ratios) which indicate how strongly each independent variable is associated with the odds of showing an outcome, in our case, following a particular trajectory compared to not following that particular trajectory. However, it is not possible to compare the magnitude of such parameters across

Table 1 Fit statistics of the growth mixture models with two through six classes

Number of classes	2	3	4	5	6
Likelihood	− 31,240.60	− 30,842.16	− 30,660.66	− 30,552.23	− 30,504.89
# of observations	4389	4389	4389	4389	4389
BIC	62,657.33	61,952.71	61,681.95	61,557.35	61,554.92
Lo–Mendell–Rubin value	3138.87	788.33	359.12	214.53	93.67
Lo–Mendell–Rubin *p* value	0.00	0.00	0.00	0.41	0.30
Entropy	0.71	0.68	0.69	0.69	0.63
Size of smallest class in %	34	16	16	5	7

Source: SOEP version 34; own calculations

different models (e.g., to determine whether an independent variable is more strongly associated with people following Trajectory A versus any other trajectory compared to following Trajectory B versus any other trajectory). We therefore estimated *Average Marginal Effects* (AME) so that we could compare the effects of different resources and life stages across classes (Mood, 2010). AME denote the average of the differences in the probability of being sorted into a particular class when the predictor increases by one unit, everything else being as observed. To facilitate interpretation of the results, we additionally plotted the *predicted probabilities* for each value of the ordinal variables (income quintile, educational level, life stage) and for each class. The predicted probabilities represent the probability of being sorted into a certain class for each value of these variables when keeping all other characteristics as observed.

4 Results

4.1 Four Typical Yet Distinct Trajectories of Life Satisfaction

Table 1 shows the statistical indicators of model fit for the GMM solutions with two through six classes. Based on the statistical criteria as well as the intuitiveness of the solution, we determined that four classes best described the data. Our decision was primarily informed by the Lo-Mendell-Rubin Test, which indicated that adding a fifth class did not significantly improve model fit. The BIC and entropy values were ambiguous: The BIC statistic indicated that, despite increasing complexity, each additional class improved model fit, while entropy was relatively stable across all class models. While the four-class solution produced sufficiently large class sizes, the five-class solution identified a class containing only five percent of the total sample. Finally, adding a fifth class did not lead to the identification of an entirely new trajectory, but merely split the class of observations characterized by continuously high life satisfaction into two only modestly different, stable levels.

As shown in Fig. 2, the four-class solution included two stable and two dynamic trajectories. Class 1 included people with high and stable life satisfaction (17% of the total sample). We labelled this class “Continuously Satisfied”. Class 4 included people with low and relatively stable life satisfaction (25%; “Continuously Dissatisfied”). While this class showed a significant decline in life satisfaction between 1990 and 1991, we chose the label “continuously dissatisfied” because the class represents persons who belong to the least satisfied persons in the sample in 1990 and remain among the least satisfied throughout

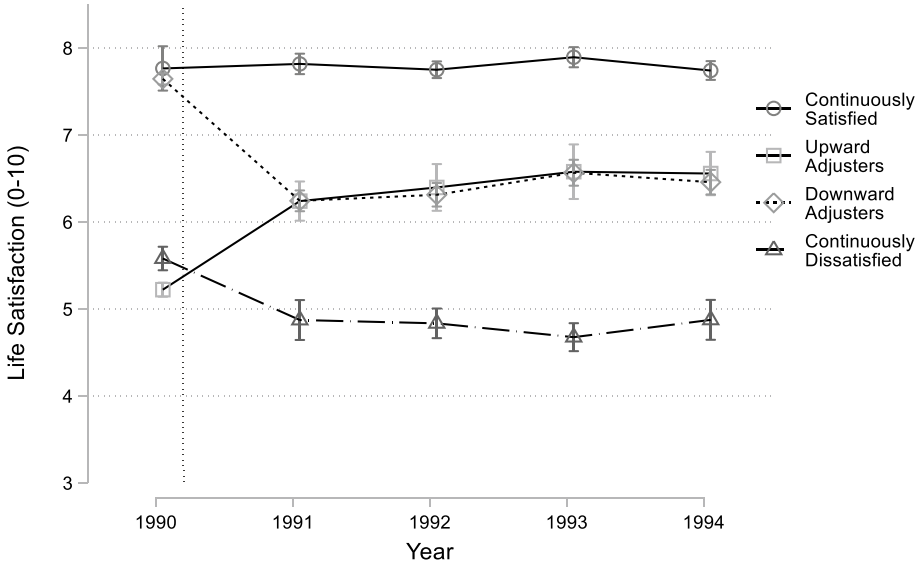

Fig. 2 Typical trajectories of life satisfaction after reunification based on growth mixture modelling (GMM). Source: SOEP version 34; own representation

the observation period. Class 3 included people who had the same high level of life satisfaction as the Continuously Satisfied in 1990 but then decreased to medium life satisfaction (24%; "Downward Adjusters"). Finally, Class 2 included people who had the lowest level of life satisfaction in 1990 but who increased to the same medium level as Downward Adjusters thereafter (34%; "Upward Adjusters"). The differences in the level of life satisfaction between classes were quite large. For instance, the effect size of the *t*-test difference between those who were continuously satisfied and those who were continuously dissatisfied in 1990 was Cohen's $d = 1.6$ and the difference between those who were continuously satisfied and those who followed a downward adjustment in 1991 was Cohen's $d = 1.2$ ($|d| \geq 0.8$ are commonly interpreted as large; Cohen, 1992).

4.2 Robustness Checks

To ensure that the identified number of classes with their typical trajectories depict the adjustment processes of former East Germans after reunification properly, we conducted several robustness checks. Using the same method and data to examine trajectories of life satisfaction, we observed different time periods. First, examining 1990 to 1992 also led to the identification of four classes, including two stable and two dynamic groups with initially high and low life satisfaction, respectively. In this solution, however, the two dynamic groups did not end up at the same level as found when examining the period between 1990 and 1994. Rather, the trajectories crossed so that respondents with initially low life satisfaction ended up with higher life satisfaction and vice versa. Second, analyzing trajectories between 1992 and 1996 (i.e., a period in which less development was expected) we identified five classes with rather stable trajectories but different levels of life satisfaction. As another robustness check, we applied the same method to the original period of 1990 to

1994 but did not exclude the top and bottom 5 percent of extreme cases. The best model for this data favors a 5-class solution consisting of two stable highly satisfied classes, two classes with minor declines from 1990 to 1991 and stable, lower levels of life satisfaction thereafter and a fifth class with an increase of life satisfaction in the years 1991 to 1993 coming from a mid-level of life satisfaction (see Figure S1 in the online supplement). This pattern is hard to bring in line with theoretical expectations we had as it mostly focusses on level differences and less on change in life satisfaction. This seems to underline that extreme answers at the first observations of the items are of lower validity but they seem to inflate level differences *between* the individuals. As a result, the classification also differentiates stronger between level differences but misses out to differentiate development *within* the individuals across time. Finally, we used the method and period (1990-1994) from the main model to analyze trajectories for the former West German sample. We identified six classes. The four biggest classes described people with different, stable levels of life satisfaction, and two smaller classes described people with upward or downward changes at different time points. Based on these robustness checks, we concluded that our main model indeed identified typical trajectories of life satisfaction reflecting former East Germans' adjustment to reunification.

4.3 Resources and Life Stage Predict Class Membership

Table 2 shows the mean levels of baseline characteristics over classes and if they statistically differ between the classes (for continuous variables based on ANOVA and for discrete variables based on χ^2-tests). For *economic resources*, those who were continuously satisfied were mostly part of the higher income quintiles (40.6% in top 2 quintiles vs. 36.5% in bottom 2 quintiles), while those with continuously low levels of satisfaction were more frequently in the lower quintiles (34.1% in top 2 quintiles vs. 44.1% in bottom 2 quintiles). The pattern for classes with stronger changes in life satisfaction was less pronounced but nonetheless visible: Those with an upward trend in life satisfaction more often exhibited income levels in the first quintile (23.1%) while those with stronger downward changes in life satisfaction more often reported income within the highest quintile (21%). The latter also showed the highest percentage of individuals being currently gainfully employed (81.4%) while the other classes did not differ from each other (75.8% vs. 76% vs. 75.6%). Regarding *social-relational resources*, no significant differences between classes were found for having a partner, but the number of children in the household differed slightly, with the highest number of children among people who showed declines in life satisfaction (0.85 children, on average) and the lowest number of children living with people who were continuously dissatisfied (0.75 children, on average). Again, those with continuously low satisfaction were also the individuals who felt most lonely (74.9% did not feel lonely) while those who were continuously satisfied exhibited the smallest level of loneliness (90.5% did not feel lonely). In terms of *personal resources*, those who were continuously satisfied and those who showed declines in satisfaction (Downward Adjusters) showed highest levels of satisfaction with health (7.7 and 7.28, on average respectively). In contrast, individuals with increases in life satisfaction (Upward Adjusters) and—with some distance—those who remained continuously dissatisfied exhibited lower satisfaction with health (6.37 and 5.81, on average respectively). Lastly, for education, it was most striking that the continuously satisfied individuals were the ones with the highest share of high education (34.6%) compared to all the other classes (between 25.6 and 28.8%).

Table 2 Resources and life stage in 1990 by class membership (unweighted)

	Continuously satisfied (class 1)	Upward adjusters (class 2)	Downward adjusters (class 3)	Continuously dissatisfied (class 4)	Total	ANOVA /χ^2 *p* value
n (%)	714 (16.6)	1052 (24.4)	1471 (34.1)	1074 (24.9)	4311 (100.0)	
Economic resources						
Net equivalized household income quintiles, n (%)						
1st (lowest), n (%)	128 (17.9)	243 (23.1)	283 (19.2)	241 (22.4)	895 (20.8)	
2nd, n (%)	133 (18.6)	202 (19.2)	287 (19.5)	233 (21.7)	855 (19.8)	
3rd, n (%)	163 (22.8)	218 (20.7)	301 (20.5)	234 (21.8)	916 (21.2)	
4th, n (%)	151 (21.1)	180 (17.1)	291 (19.8)	181 (16.9)	803 (18.6)	
5th (highest), n (%)	139 (19.5)	209 (19.9)	309 (21.0)	185 (17.2)	842 (19.5)	0.02
Currently gainfully employed, n (%)	541 (75.8)	800 (76.0)	1197 (81.4)	814 (75.8)	3352 (77.8)	0.00
Social-relational resources						
Partner (yes), n (%)	541 (75.8)	779 (74.0)	1101 (74.8)	818 (76.2)	3239 (75.1)	0.68
# of children in household, mean (sd)	0.78 (0.94)	0.77 (0.93)	0.85 (0.96)	0.75 (0.97)	0.79 (0.95)	0.04
Does not feel lonely (at all) (yes), n (%)	645 (90.5)	838 (80.2)	1247 (85.6)	795 (74.9)	3525 (82.4)	0.00
Personal resources						
Satisfaction with health, mean (sd)	7.70 (2.15)	6.37 (2.62)	7.28 (2.33)	5.81 (2.88)	6.76 (2.62)	0.00
Education, n (%)						
Low	84 (11.8)	145 (13.8)	186 (12.6)	127 (11.8)	542 (12.6)	
Medium	383 (53.6)	638 (60.6)	862 (58.6)	664 (61.8)	2547 (59.1)	
High	247 (34.6)	269 (25.6)	423 (28.8)	283 (26.4)	1222 (28.3)	0.00
Life stage (years), n (%)						
16–24	107 (15.0)	150 (14.3)	243 (16.5)	110 (10.2)	610 (14.1)	
25–39	251 (35.2)	357 (33.9)	561 (38.1)	374 (34.8)	1543 (35.8)	
40–54	161 (22.5)	274 (26.0)	397 (27.0)	358 (33.3)	1190 (27.6)	
55–64	111 (15.5)	133 (12.6)	156 (10.6)	128 (11.9)	528 (12.2)	
65 and older	84 (11.8)	138 (13.1)	114 (7.7)	104 (9.7)	440 (10.2)	0.00

Table2 (continued)

	Continuously satisfied (class 1)	Upward adjusters (class 2)	Downward adjusters (class 3)	Continuously dissatisfied (class 4)	Total	ANOVA /χ^2 *p* value
Controls						
Female, n (%)	370 (51.8)	554 (52.7)	754 (51.3)	585 (54.5)	2263 (52.5)	0.44

Source: SOEP version 34; own calculations. Significance testing on group differences is based on ANOVA for continuous and χ^2-values for discrete variables

Significant differences between the classes were also found with regard to the *life stage*. While those who reported continuously higher levels of satisfaction were over-proportionately frequent in the late career stage (15.5% vs. 10.6% to 12.6%) and less frequent in their middle career (22.5% vs. 26% to 33.3%), those who reported increases in life satisfaction (Upward Adjusters) were more often in the retirement life stage (13.1% vs. 7.7% to 11.8%). In addition, those who reported decreases in satisfaction (Downward Adjusters) were more frequently in their pre- and early career stages (16.5% vs. 10.2% to 15% and 38.1% vs. 33.9% to 35.2%, respectively) and those who reported continuously lower levels of satisfaction were most often in the middle of their careers (33.3% vs. 22.5% to 27%). No gender differences were found.

Table 3 presents the results of the binary logistic regression analyses to show which of the individual characteristics predicts the odds of belonging to a particular class. The relationships between baseline economic, social-relational, personal resources and life stage on the one hand and membership in each of the four classes on the other hand are expressed as AME. The results of a multinomial logistic regression were highly similar (available upon request).

With regard to *economic resources*, differences in the trajectories of life satisfaction were not associated with income. However, being employed (versus not employed) reduced the probability by four percentage points to be classified with a steady low level of life satisfaction. Comparing effect sizes over class, we found that individuals without employment had a higher chance to be continuously dissatisfied compared to experiencing changes in their life satisfaction but not compared to those with continuous high life satisfaction. Concerning *social-relational resources*, neither having a partner nor the number of children living in the household were significantly related to class membership. However, loneliness was a strong predictor of each of the four trajectories: Compared to individuals who felt lonely at baseline, individuals who did not feel lonely were 10 percentage points more likely to show a continuously high level of satisfaction, and nine percentage points less likely to exhibit continuously low levels of life satisfaction. The relationships between loneliness and the two dynamic classes were less pronounced: While, compared to people who felt lonely, people who did not feel lonely were five percentage points more likely to belong to the class of individuals whose life satisfaction declined, no relationship between loneliness and the class of people with increasing satisfaction was found.

Finally, with regard to *personal resources*, education was related to the likelihood of showing continuously high levels of life satisfaction only. Figure 3A displays the relationship between educational level and class membership in more detail: Relative to individuals with medium education (but also with low education), individuals with high education were five percentage points more likely of being continuously satisfied. Educational level was unrelated to membership in any of the other classes. Concerning satisfaction with

health, scoring one more point on the 11-point scale was related to a three-percentage-point increase in the likelihood of being continuously satisfied, and a two-percentage-point increase in the likelihood of experiencing a decline in life satisfaction. Moreover, higher satisfaction with health was also associated with a lower probability of either improving overall life satisfaction (AME = −0.01) or being continuously dissatisfied (AME = −0.03). In other words, individuals who were more satisfied with their health at baseline were more likely to maintain high life satisfaction or—if they experienced changes in life satisfaction—a rather immediate and sustained decrease in life satisfaction.

Life stage was associated with stable levels of life satisfaction. As displayed in Fig. 3B, individuals who were in the two middle life stage groups (25–39 and 40–54 years of age) at the time of reunification were more likely to belong to the Continuously Dissatisfied class compared to either younger (16–24 years) or older (55–64, 65 + years) age groups. Additionally, individuals who were in the two later life stages (55–64, 65 + years) had a significantly larger probability to be in the Continuously Satisfied class. Generally, the pattern of life stages was as expected: early- and mid-career stages were associated with stable low life satisfaction whereas later career stages were associated with stable high life satisfaction. While this pattern pertained to stable trajectories, only individuals in retirement age were more likely part of the Upward Adjusters.

5 Discussion

Building on previous research regarding adjustment to other critical life events, this study set out to identify typical yet distinct trajectories of life satisfaction among former East Germans after reunification. To the best of our knowledge our results demonstrate, for the first time that there was considerable heterogeneity in how former East Germans reacted to the shock of reunification. Using five waves of longitudinal data from SOEP and applying GMM, we identified four common patterns of adjustment processes: Continuously Satisfied (17%), Upward Adjusters (24%), Downward Adjusters (34%), and Continuously Dissatisfied (25%). The four classes differ with regard to their initial level of life satisfaction just prior to reunification, as well as with regard to how life satisfaction changed over time (stability, increase, or decrease).

Complementing prior studies on the *average* trajectory of life satisfaction after reunification, which by design are much less informative about heterogeneity within the population, our results allow us to conclude that—within the first four years after reunification—about 41% of former East Germans adapted positively (i.e., by either maintaining a high level or improving life satisfaction), while about 59% of former East Germans did not (i.e., by decreasing or maintaining a low level of life satisfaction). Moreover, nearly 60 percent of the sample were classified as either Downward Adjusters or Upward Adjusters. Downward and Upward Adjusters followed fundamentally different pathways to eventually reach an almost identical level of life satisfaction. It is worth noting that a cross-sectional approach focusing on mean values would not have been able to differentiate between these two very different groups of people, one of which became better off while the other became worse off after reunification. The result that more than half of the sample experienced significant changes in life satisfaction reflects just how profoundly reunification changed many different aspects of everyday life for many people in former East Germany.

Resilience in the face of critical life events is widely believed to depend on a person's resources as well as on his or her life stage. In line with previous research (e.g., Kim &

Table 3 Results of the logistic regression analyses of the relationship between baseline resources and life stage and class membership (average marginal effects)

	Continuously satisfied (class 1)	Upward adjusters (class 2)	Downward adjusters (class 3)	Continuously dissatisfied (class 4)
Economic resources				
Household income quintiles (ref.: 3rd)				
1st (lowest)	−0.04	0.01	0.02	0.00
	(0.02)	(0.03)	(0.03)	(0.03)
2nd	−0.03	−0.01	0.01	0.03
	(0.02)	(0.02)	(0.03)	(0.03)
4th	0.00	−0.01	0.03	−0.02
	(0.02)	(0.02)	(0.02)	(0.02)
5th (highest)	−0.01	0.02	0.04	−0.05
	(0.02)	(0.02)	(0.03)	(0.02)
Currently employed	−0.03	0.04	0.03	−0.04*
	(0.02)	(0.02)	(0.02)	(0.02)
Social-relational resources				
Partner	0.02	0.01	0.01	−0.03
	(0.02)	(0.02)	(0.02)	(0.02)
# of children in household	0.00	0.01	0.01	−0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Not lonely	0.10***	−0.02	0.05*	−0.09***
	(0.02)	(0.02)	(0.02)	(0.02)
Personal resources				
Education (ref.: medium)				
Low	−0.01	0.00	0.03	−0.03
	(0.02)	(0.02)	(0.03)	(0.02)
High	0.05***	−0.03	0.00	−0.02
	(0.01)	(0.02)	(0.02)	(0.02)
Satisfaction with health	0.03***	−0.01***	0.02***	−0.03***
	(0.00)	(0.00)	(0.00)	(0.00)
Life stage (years; ref.: 40–54 years)				
16–24	0.01	0.04	0.03	−0.10***
	(0.02)	(0.03)	(0.03)	(0.03)
25–39	−0.00	0.01	0.01	−0.02
	(0.02)	(0.02)	(0.02)	(0.02)
55–64	0.12***	0.03	0.00	−0.12***
	(0.03)	(0.03)	(0.03)	(0.02)
65 and older	−0.12**	0.11**	0.02	−0.16**
	(0.04)	(0.04)	(0.04)	(0.03)
Controls				
Female	0.01	0.01	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Model fit				
Pseudo R^2	0.06	0.01	0.02	0.06
n (individuals)	4277	4277	4277	4277

Table 3 (continued)

	Continuously satisfied (class 1)	Upward adjusters (class 2)	Downward adjusters (class 3)	Continuously dissatisfied (class 4)
n (households)	2106	2106	2106	2106
χ^2-model fit	171.99	46.7	100.61	240.19
p value of χ^2-model fit	0.00	0.00	0.00	0.00

Source: SOEP version 34; own calculations. Standard errors presented in parentheses. Models are controlled for household clustering

Significance: $^*p<0.05$; $^{**}p<0.01$; $^{***}p<0.001$

Moen, 2002; Pinquart & Schindler, 2007; Wang, 2007), our results indicate that individuals with more baseline resources were more likely to maintain high life satisfaction, whereas individuals with fewer resources were more likely to maintain low life satisfaction. Based on logistic regression analyses, we found that employment, loneliness, and satisfaction with health but neither income, having a partner nor the number of children in the household predicted class membership. Our results therefore demonstrate that it is not just a matter of "money buying us happiness" (Headey et al., 2008; also see Frijters et al., 2004b), as income was in fact unrelated to whether a person's life satisfaction improved, declined or remained stable after reunification. In contrast, loneliness and satisfaction with health emerged as the strongest and most robust predictors of class membership.

Relative to the other classes, having fewer baseline resources was most strongly related to the likelihood of experiencing continuously low levels of life satisfaction. Specifically, people who were *not* employed, lonely, and less satisfied with their health were *more* likely to maintain a low level of life satisfaction after reunification. Although our results do not allow us to draw conclusions about whether the life satisfaction of people who were not employed, lonely and less satisfied with their health would have improved had reunification not occurred, we can conclude that reunification did not appear to make the lives of this vulnerable group any more satisfying. The result that life stage—specifically, being in the prime working ages between 25 and 55 years—was related to the likelihood of belonging to the Continuously Dissatisfied class suggests that in particular individuals who appear to already have less economic and social-relational resources were less likely to cope with the new (labor) market conditions (see Gürtzgen & Diegmann, 2020 for a related discussion).

In contrast, the other classes tended to be better equipped with resources: Not being lonely, having high education, being more satisfied with health and being in a later life stage were positively related to the likelihood of being Continuously Satisfied, whereas (absence of) loneliness and satisfaction with health were related to the Upward Adjusters and Downward Adjusters. In logistic regressions, the resources we examined therefore do not readily differentiate people whose lives became more satisfying after reunification from those whose lives became less satisfying except that people who felt socially more integrated were less often in the Downward Adjusters class. This seems to be a central mechanism. However, descriptive analyses provide evidence that the Upward and Downward Adjusting classes differed with regard to three characteristics in particular: Former East Germans who exhibited an increase in their life satisfaction more often belonged to the lowest income quintile, had lower levels of satisfaction with health and were more frequently in the late career stage, while those who lost satisfaction during the course of reunification more frequently belonged to the highest income quintile, were more satisfied

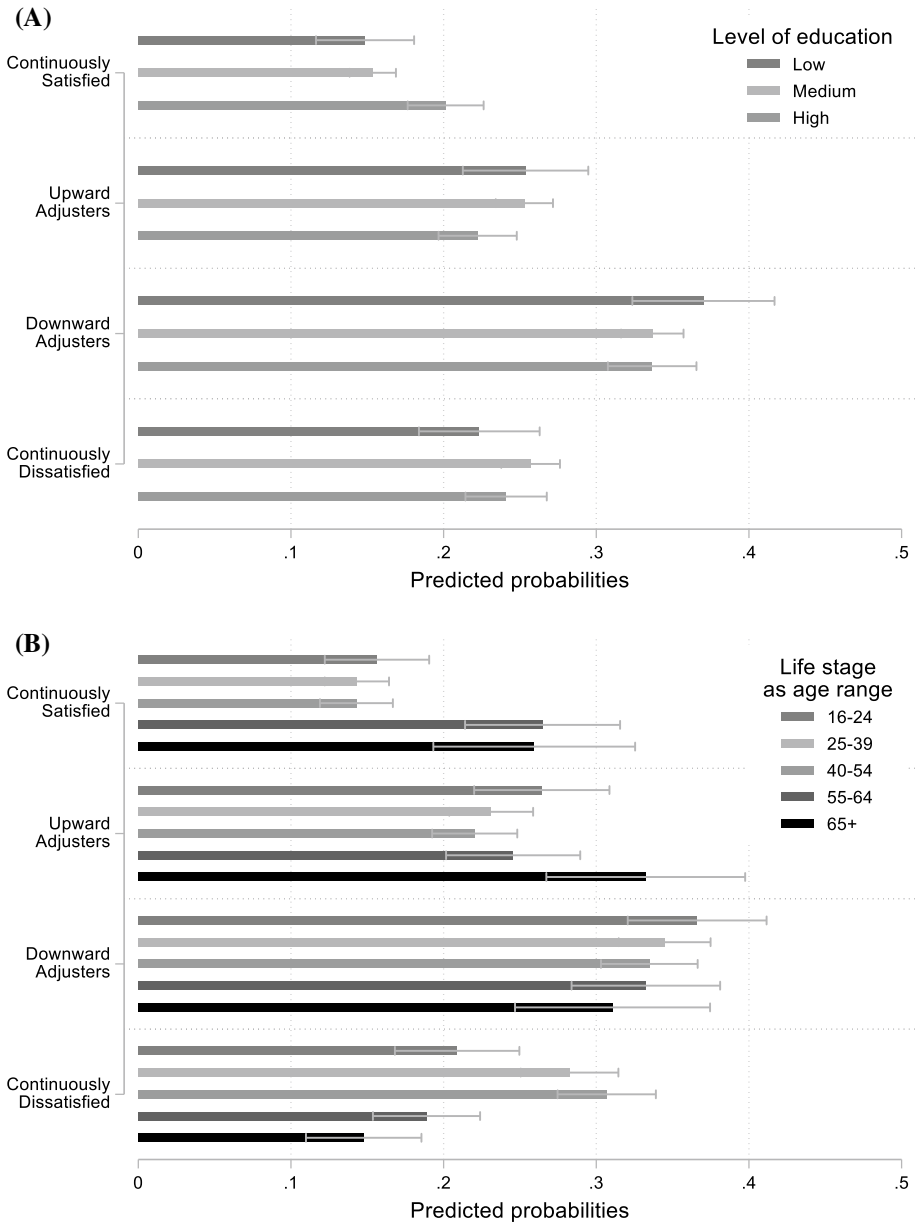

Fig. 3 Predicted probabilities of being in a specific class by educational level (**A**) and life stage (**B**) in 1990. Source: SOEP version 34; own representation

with their health and more often in the early career stages. While this finding suggests that particularly retirees with little pension income in the GDR might have profited from reunification, individuals with better income at an early career stage might have suffered from this life event. However, more research in particular focusing on the consequences

of belonging to one of the dynamic classes is necessary to better understand who were the 'winners' and the 'losers' of reunification among the East German population.

Some *limitations* of our study need to be mentioned. *First*, due to a lack of data, we were unable to account for East Germans' pre-existing level of satisfaction prior to the fall of the Berlin Wall. For some, the measurement of life satisfaction in 1990 may reflect a temporary peak due to the euphoria of the time. Hence, for example some of the individuals who were classified as Downward Adjusters may have been returning to their long-term personal level after their initial euphoria dissipated as opposed to decreasing life satisfaction due to reunification per se. *Second*, the data set at hand did not allow for a more elaborated operationalization of resources nor life stages. Research on adjustment to critical life events has found that psychological resources, in particular sense of control, are key determinants of adaptation. Unfortunately, SOEP did not collect data on any psychological variables until 2005. Moreover, life stages were approximated using age of the respondent, because detailed information about labor market-specific challenges and individual market capacities was not available. *Third*, although policy changes most likely affected men and women differently, the current study could not conceptually and analytically elaborate on these potential differences. We applied a simplified approach for tackling gender differences since these were not the focus of our study. However, future research might want to focus more explicitly on gender-specific effects of policy changes, resources, and life stage challenges to better predict differences in vulnerability by gender.

In sum, our results indicate that there was considerable heterogeneity in patterns of adjustment after reunification for former East Germans and that particularly loneliness and dissatisfying health appear to have made it difficult to master the challenge of adjusting to a major social change. Moreover, people in the prime age of career tended to struggle the most with the post-reunification situation, presumably because work-related changes affected them most strongly. Overall, German reunification can certainly be considered as a life event with heterogeneous consequences for the East German population. Our findings are not only informative with regard to the German case specifically, but should also be applicable to other post-Communist countries whose citizens have been shown to exhibit similar temporal patterns in the mean-levels of life satisfaction (e.g., Easterlin, 2009; also see Tomasik & Silbereisen, 2012).

Most importantly, the findings presented here constitute an important basis for future research investigating the *consequences* of following a particular trajectory of life satisfaction (i.e., adjustment) after reunification for other important (developmental) outcomes: Do those on a more favorable adaptation trajectory also experience more favorable (long-term) income, labor market, or health trajectories? And what is the relative importance of *direct effects* of East Germans initial resource endowment at the time of reunification on subsequent accumulation of inequalities (in the sense of a 'Matthew effect') vs. their *indirect effects* mediated through resources' role in setting individuals' on a specific track allowing individuals to adjust more (or less) successfully to the critical life event of reunification? The way in which an individual (subjectively) experienced the system transformation and her or his own (psychological) adjustment to this fundament social change might be more important than the individuals' (objective) resources, particularly if outcomes such as mental well-being, preferences, or political attitudes are considered. Research on the longer-term consequences of trajectories of life satisfaction after reunification could clearly contribute to improving our general understanding of how major social changes and critical life events contribute to intra-cohort social inequalities (e.g., Dannefer, 2020).

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References

Anusic, I., Yap, S. C. Y., & Lucas, R. E. (2014). Testing set-point theory in a Swiss national sample: Reaction and adaptation to major life events. *Social Indicators Research, 119*(3), 1265–1288. https://doi.org/10.1007/s11205-013-0541-2

Bartolini, S., Bilancini, E., & Sarracino, F. (2013). Predicting the trend of well-being in Germany: How much do comparisons, adaptation and sociability matter? *Social Indicators Research, 114*(2), 169–191. https://doi.org/10.1007/s11205-012-0142-5

Brainerd, E. (1998). Winners and losers in Russia's economic transition. *American Economic Review, 88*(5), 1094–1116. https://doi.org/10.2307/116862

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155–159. https://doi.org/10.1037/0033-2909.112.1.155

Dannefer, D. (2020). Systemic and reflexive: Foundations of cumulative dis/advantage and life-course processes. *The Journals of Gerontology: Series B, 75*(6), 1249–1263. https://doi.org/10.1093/geronb/gby118

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542–575. https://doi.org/10.1037/0033-2909.95.3.542

Diener, E., Inglehart, R., & Tay, L. (2013). Theory and validity of life satisfaction scales. *Social Indicators Research, 112*(3), 497–527. https://doi.org/10.1007/s11205-012-0076-y

Diener, E., Oishi, S., & Tay, L. (2018). Advances in subjective well-being research. *Nature Human Behaviour, 2*(4), 253–260. https://doi.org/10.1038/s41562-018-0307-6

Easterlin, R. A. (2009). Lost in transition: Life satisfaction on the road to capitalism. *Journal of Economic Behavior & Organization, 71*(2), 130–145. https://doi.org/10.1016/j.jebo.2009.04.003

Easterlin, R. A., & Plagnol, A. C. (2008). Life satisfaction and economic conditions in east and west Germany pre- and post-unification. *Journal of Economic Behavior & Organization, 68*(3–4), 433–444. https://doi.org/10.1016/j.jebo.2008.06.009

Ehrhardt, J., Saris, W., & Veenhoven, R. (2000). Stability of life-satisfaction over time. *Journal of Happiness Studies, 1*, 177–205. https://doi.org/10.1023/A:1010084410679

Elder, G. H., Johnson, M. K., & Crosnoe, R. (2004). The emergence and development of life course theory. In J. T. Mortimer & M. J. Shanahan (Eds.), *Handbook of the life course* (pp. 3–19). Springer.

Frijters, P., & Beatton, T. (2012). The mystery of the U-shaped relationship between happiness and age. *Journal of Economic Behavior & Organization, 82*(2–3), 525–542. https://doi.org/10.1016/j.jebo.2012.03.008

Frijters, P., Haisken-DeNew, J. P., & Shields, M. A. (2004a). Investigating the patterns and determinants of life satisfaction in Germany following reunification. *Journal of Human Resources, XXXIX*(3), 649–674. https://doi.org/10.3368/jhr.XXXIX.3.649

Frijters, P., Haisken-DeNew, J. P., & Shields, M. A. (2004b). Money does matter! Evidence from increasing real income and life satisfaction in East Germany following reunification. *American Economic Review, 94*(3), 730–740. https://doi.org/10.1257/0002828041464551

Galatzer-Levy, I. R., Bonanno, G. A., & Mancini, A. D. (2010). From marianthal to latent growth mixture modeling: A return to the exploration of individual differences in response to unemployment. *Journal of Neuroscience, Psychology, and Economics, 3*(2), 116–125. https://doi.org/10.1037/a0020077

Goebel, J., Grabka, M. M., Liebig, S., Kroh, M., Richter, D., Schröder, C., & Schupp, J. (2019). The German Socio-Economic Panel (SOEP). *Jahrbücher Für Nationalökonomie Und Statistik, 239*(2), 345–360. https://doi.org/10.1515/jbnst-2018-0022

Goedicke, A. (2013). A "ready-made state": The mode of institutional transition in East Germany after 1989. In M. Diewald, A. Goedicke, & K. U. Mayer (Eds.), After the fall of the wall: Life courses in the transformation of East Germany (pp. 44–64). https://doi.org/10.11126/stanford/9780804752084.003.0003

Goldstein, J. R., & Kreyenfeld, M. (2011). Has East Germany overtaken west Germany? Recent trends in order-specific fertility. *Population and Development Review, 37*(3), 453–472. https://doi.org/10.1111/j.1728-4457.2011.00430.x

Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual Review of Psychology, 60*, 549–576. https://doi.org/10.1146/annurev.psych.58.110405.085530

Gürtzgen, N., & Diegmann, A. (2020). Does low-pay persist across different regimes? Evidence from German unification. *Economics of Transition and Institutional Change, 28*(3), 413–440. https://doi.org/10.1111/ecot.12244

Hansson, I., Buratti, S., Thorvaldsson, V., Johansson, B., & Berg, A. I. (2020). Disentangling the mechanisms of retirement adjustment: Determinants and consequences of subjective well-being. *Work, Aging and Retirement, 6*(2), 71–87. https://doi.org/10.1093/workar/waz021

Headey, B., Muffels, R., & Wooden, M. (2008). Money does not buy happiness: Or does it? A reassessment based on the combined effects of wealth, income and consumption. *Social Indicators Research, 87*(1), 65–82. https://doi.org/10.1007/s11205-007-9146-y

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*(4), 307–324. https://doi.org/10.1037/1089-2680.6.4.307

Hummelsheim, D. (2009). Germany: Will the male breadwinner model survive? In H.-J. Andreß & D. Hummelsheim (Eds.), *When marriage ends: Economic and social consequences of partnership dissolution* (pp. 51–77). Edward Elgar. https://doi.org/10.4337/9781848447202.00010.

Infurna, F. J., & Grimm, K. J. (2018). The use of growth mixture modeling for studying resilience to major life stressors in adulthood and old age: Lessons for class size and identification and model selection. *The Journals of Gerontology: Series B, 73*(1), 148–159. https://doi.org/10.1093/geronb/gbx019

Infurna, F. J., & Luthar, S. S. (2016). Resilience to major life stressors is not as common as thought. *Perspectives on Psychological Science, 11*(2), 175–194. https://doi.org/10.1177/1745691615621271

Infurna, F. J., Wiest, M., Gerstorf, D., Ram, N., Schupp, J., Wagner, G. G., & Heckhausen, J. (2017). Changes in life satisfaction when losing one's spouse: Individual differences in anticipation, reaction, adaptation and longevity in the German Socio-economic Panel Study (SOEP). *Ageing and Society, 37*(5), 899–934. https://doi.org/10.1017/S0144686X15001543

Jann, B. (2014). Plotting regression coefficients and other estimates. *The Stata Journal: Promoting Communications on Statistics and Stata, 14*(4), 708–737. https://doi.org/10.1177/1536867X1401400402

Jones, R. (2013). RUNMPLUS: Stata module to run Mplus from Stata. *Statistical Software Components*.

Kim, J. E., & Moen, P. (2002). Retirement transitions, gender, and psychological well-being: A life-course, ecological model. *Journals of Gerontology - Series B Psychological Sciences and Social Sciences, 57*(3), 212–222. https://doi.org/10.1093/geronb/57.3.P212

Kreuter, F., & Muthén, B. (2008). Analyzing criminal trajectory profiles: bridging multilevel and group-based approaches using growth mixture modeling. *Journal of Quantitative Criminology, 24*(1), 1–31. https://doi.org/10.1007/s10940-007-9036-0

Lang, S. (2017). Gender equality in post-unification Germany: Between GDR legacies and EU-level pressures. *German Politics, 26*(4), 556–573. https://doi.org/10.1080/09644008.2017.1365842

Little, R. J. A., & Rubin, D. B. (2002). *Statistical analysis with missing data*. Wiley. https://doi.org/10.1002/9781119013563.

Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: A meta-analysis. *Journal of Personality and Social Psychology, 102*(3), 592–615. https://doi.org/10.1037/a0025948

Mancini, A. D., Bonanno, G. A., & Clark, A. E. (2011). Stepping off the hedonic treadmill. *Journal of Individual Differences, 32*(3), 144–152. https://doi.org/10.1027/1614-0001/a000047

Mayer, K. U. (2006). After the fall of the wall: Living through the post-socialist transformation in East Germany. In *After the fall of the wall* (pp. 1–28). Stanford University Press. https://doi.org/10.11126/stanford/9780804752084.003.0001.

Mood, C. (2010). Logistic regression: Why we cannot do what we think we can do, and what we can do about it. *European Sociological Review, 26*(1), 67–82. https://doi.org/10.1093/esr/jcp006

Muthén, L., & Muthén, B. (2010). *User's guide sixth edition. Mplus*. https://doi.org/10.1111/j.1600-0447.2011.01711.x.

Noll, H.-H., & Weick, S. (2010). Subjective well-being in Germany: Evolutions, Determinants and Policy Implications. In B. Greve (Ed.), *Happiness and social policy in europe* (pp. 71–90). Edward Elgar. https://doi.org/10.4337/9781781000731.

Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(4), 535–569. https://doi.org/10.1080/10705510701575396

Petrunyk, I., & Pfeifer, C. (2016). Life satisfaction in Germany after reunification: Additional insights on the pattern of convergence. *Jahrbücher Für Nationalökonomie Und Statistik, 236*(2), 217–239. https://doi.org/10.1515/jbnst-2015-1010

Pinquart, M., & Schindler, I. (2007). Changes of life satisfaction in the transition to retirement: A latent-class approach. *Psychology and Aging, 22*(3), 442–455. https://doi.org/10.1037/0882-7974.22.3.442

Schimmack, U., Krause, P., Wagner, G. G., & Schupp, J. (2010). Stability and change of well being: An experimentally enhanced latent state-trait-error analysis. *Social Indicators Research, 95*(1), 19–31. https://doi.org/10.1007/s11205-009-9443-8

Silbereisen, R. K. (2005). Social change and human development: Experiences from German unification. *International Journal of Behavioral Development, 29*(1), 2–13. https://doi.org/10.1080/01650250444000478

SOEP. (2019). Socio-Economic Panel (SOEP): Data for years 1984–2017. https://doi.org/10.5684/soep.v34.

Tomasik, M. J., & Silbereisen, R. K. (2009). Demands of social change as a function of the political context, institutional filters, and psychosocial resources. *Social Indicators Research, 94*(1), 13–28. https://doi.org/10.1007/s11205-008-9332-6

Tomasik, M. J., & Silbereisen, R. K. (2012). Social change and adolescent developmental tasks: The case of postcommunist Europe. *Child Development Perspectives, 6*(4), 326–334. https://doi.org/10.1111/j.1750-8606.2011.00228.x

Verhoeven, W.-J., Jansen, W., & Dessens, J. (2008). Losers in market transition: The unemployed, the retired, and the disabled. *European Sociological Review, 25*(1), 103–122. https://doi.org/10.1093/esr/jcn037

Wang, M. (2007). Profiling retirees in the retirement transition and adjustment process: examining the longitudinal change patterns of retirees' psychological well-being. *Journal of Applied Psychology, 92*(2), 455–474. https://doi.org/10.1037/0021-9010.92.2.455

Wang, M. (2012). Retirement: An adult development perspective. In S. K. Whitbourne & M. J. Sliwinski (Eds.), *The Wiley-Blackwell handbook of adulthood and aging* (pp. 416–432). Blackwell.

Wang, M., Henkens, K., & van Solinge, H. (2011). Retirement adjustment: A review of theoretical and empirical advancements. *American Psychologist, 66*(3), 204–213. https://doi.org/10.1037/a0022414

Wang, M., & Shi, J. (2014). Psychological research on retirement. *Annual Review of Psychology, 65*(1), 209–233. https://doi.org/10.1146/annurev-psych-010213-115131

Westerhof, G. J., & Keyes, C. L. M. (2006). After the fall of the berlin wall: Perceptions and consequences of stability and change among middle-aged and older East and West Germans. *The Journals of Gerontology Series b: Psychological Sciences and Social Sciences, 61*(5), S240–S247. https://doi.org/10.1093/geronb/61.5.S240

Wetzel, M., Huxhold, O., & Tesch-Römer, C. (2016). Transition into retirement affects life satisfaction: Short- and long-term development depends on last labor market status and education. *Social Indicators Research*, *125*(3). https://doi.org/10.1007/s11205-015-0862-4.

Wickrama, K., Lee, T. K., O'Neal, C. W., & Lorenz, F. (2016). *Higher-order growth curves and mixture modeling with Mplus*. Routledge. https://doi.org/10.4324/9781315642741

Source: SOEP version 34; own calculations. Significance testing on group differences is based on ANOVA for continuous and χ^2-values for discrete variables