Rethinking the Hedonic Treadmill

Differences in Adaptation Patterns across Events, People and Nations

by

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Statement of Originality

This dissertation is submitted for the degree of Doctor of Philosophy in Psychology. I, the undersigned, declare that this dissertation is my own original work. Where I have taken ideas and / or wording from another source this is explicitly referenced in the text. No part of this thesis has been accepted or is currently being submitted for any other degree or qualification at this university or elsewhere.

Signature: _____ Date: _____

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Table of Contents

Table of Figures

Table of Tables

I. Introduction

Pursuit of happiness, albeit an old topic of interest in philosophy[1], became one of the prominent themes in public and political discourse in the 2nd half of the 20th century, as well as in the social sciences. The social roots of such growth of public interest lie in the increase in the material standard of living and the rise of individualism (Veenhoven, 2007). For those generations, who grew up in affluent societies and were free of constant worries about basic survival needs, the question arose as to what is more to a good life than economic prosperity: what makes a society comfortable to live in, which life-styles are more conducive to personal well-being, what techniques can be used in order to increase overall appreciation of life? With the rise of individualism, the concept of self-fulfillment broadened; it began to embrace not only materialistic values, but also self-actualization, individualization of the life-course, emancipation from group authorities[2], and a *striving for personal happiness*.

Alongside this shift in societal values, the concept of subjective well-being (SWB) emerged in social and behavioral sciences (Campbell, 1974; Andrews & Withey, 1976). *Economics* faced disenchantment with limitless economic growth, fueled by concerns about growth's negative consequences, such as the impact on nature, the rise in uncertainty and inequality (e.g., Attali & Guillaume, 1974), etc. These concerns called for a rethinking of developmental goals and, subsequently, for the search and adoption of supplementary non-material measures of societal functioning (so called social indicators), such as availability of medical care, level of literacy, and gender equality[3]. Discourses of sustainable development and quality-of-life emerged. Within the quality-of-life

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[1] Thoroughly discussed, for example, in the works of J. Bentham, such as "Introduction to Morals and Legislation" (1789).
[2] Welzel and Inglehart (2010) label these values as agentic orientations.
[3] Some contemporary indicators of quality-of-life (e.g., Human Development Index) are designed as composite measures, trying to bring together domains believed to play a significant role in people's lives.

discourse, the concept of SWB has been developing as an alternative measure of *utility*, intended to complement purely economic indicators, such as GDP (e.g., Stiglitz *et al.*, 2010). Development of this concept reflected an increasing focus on *outcomes* of life, rather than on *conditions* considered beneficial.

In *psychology*, which historically was concerned primarily with abnormalities and distress, a new field of positive psychology appeared. This field started to place more emphasis on the development of human strength, maturity, mental health, and well-being (e.g., Aspinwall & Staudinger, 2003).

Even though it has been stated that "subjective well-being is no great issue in sociology" (Veenhoven, 2008, p. 44)[4], measures of life satisfaction, happiness, and satisfaction with life domains have for a long time been included in social reporting surveys (e.g., Campbell *et al.*, 1976). Also, satisfaction with life domains has been a common topic in sub-disciplines within sociology: for example, job satisfaction has been studied in the sociology of work and organizations (Veenhoven, 2008). Recently, SWB became a prominent theme in values studies (e.g., Welzel & Inglehart, 2009). Today, SWB is a subject of interdisciplinary research, and has been widely discussed as the primary aim of social policy and one of the main indicators of national progress (e.g., Veenhoven, 2004).

Once the concept of SWB had been widely accepted by scientific community, numerous attempts were made in order to identify its determinants and consequences. Contemporary theories of SWB aim to understand the causal effect of macro-level (i.e., living conditions in the society), meso-level (i.e., organizations and communities) and micro-level factors. Micro-level factors comprise personality, life events, and demo-

[4] Veenhoven, for example, argues that SWB is neglected in sociology for a number of reasons, such as sociology being focused primarily on indicators of objective well-being (e.g., social cohesion), presumed social construction of SWB, etc. (see Veenhoven, 2008, for review).

graphic variables, such as income, education, gender, etc. (e.g., Diener, 2001). The present work contributes to the body of research on the effect of *critical life events* on SWB.

1 What is Subjective Well-being? Definition, Determinants

There is a long established tradition to distinguish between two perspectives on well-being[5] – eudaimonic and hedonistic (Waterman, 1990; Deci & Ryan, 2001). Eudaimonia refers to engagement in meaningful activities and actualization of one's potential (Waterman, 1990), whereas hedonism refers to maximizing positive feelings. Although experiences of eudaimonia and hedonic enjoyment may overlap, important differences in their nature remain (for example, hedonic pleasure may arise from various activities, whereas eudaimonia is only evoked by activities which actualize one's potential). Within the hedonistic tradition of thinking, SWB can be defined as judging life positively and feeling good (Diener *et al.*, 1997). The widely accepted "tripartite" model (Diener, 1984) distinguishes three components of SWB—satisfaction, positive affect, and negative affect. Life satisfaction represents a cognitively based evaluation of life that reflects a good fit between personal aspirations and perceived realities (Grob *et al.*, 1996). Subsuming life satisfaction to a purely cognitive phenomenon is, no doubt, conditional, because a person's dominant affect (positive or negative) certainly also shapes the subjective evaluation of life as a whole (Veenhoven, 2008)[6]. Positive affect and negative affect are largely independent constructs, which have distinct causes and can co-occur at the same moment (Schimmack, 2008); however, they are found to be not completely uncorrelated, as was assumed before (e.g., Bradburn, 1969).

[5] The term 'well-being' is often equated within this context with the term 'happiness'; for example, Waterman (1990) uses the term 'happiness' whereas Deci & Ryan (2001) or Haybron (2008) refer to well-being.

[6] Due to significant correlations between cognitive and affective indicators, they are sometimes used as interchangeable constructs.

As mentioned above, contemporary theories of SWB focus on several groups of determinants: macro-level living conditions, meso-level structures, such as communities, and micro-level factors, namely, demographic characteristics, personality, and life events[7]. Living conditions have been given primary importance within the so-called *livability*[8] *theory,* which claims that cross-national differences in SWB are to a large extent explained by economic and societal factors such as national wealth, corruption level, democratic freedoms, crime rate, etc. Indeed, a number of macro-level characteristics are correlated with SWB; today we know that SWB is influenced by GDP (e.g., Easterlin, 1974), income inequality (Oshio & Kobayashi, 2010), economic and political freedom (Veenhoven, 2011), quality of governance and degree of corruption (Ott, 2010), respect for human rights (Ott, 2010), level of trust in the society (Layard, 2005), etc.

Several theoretical models consider the impact of personality on SWB. *Personality theory* (Costa & McCrae, 1980) states that SWB depends mostly on personality traits, namely, extraversion and neuroticism. Since these personality features are rather stable, the level of SWB is stable as well, and may be predicted by previous measurements. Although personality theory does contribute to the comprehensive understanding of SWB determinants, it has severe limitations. It is argued, that if this theory were true, dispersion of SWB across countries would not be as dramatic as it actually is (e.g., Veenhoven, 2000). Apparently, personality traits explain only part of the variance in SWB (Suh *et al.*, 1996); moreover, the amount of variance explained by personality traits differs across countries (Staudinger *et al.*, 1999).

Dynamic equilibrium theory (Heady & Wearing, 1989) adds a new component to the relationship between personality and SWB, namely, life events. In their classical ar-

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[7] Research on macro-level factor explains differences in SWB between *countries*, while research on micro-level factors deals with *inter-individual* differences in SWB. Even though the average level of SWB in a given country results from aggregation of individual evaluations, these two levels should not be mixed up.
[8] The term is introduced by R. Veenhoven (1995)

ticle, Heady & Wearing (1989) confirm that life events do have an impact on SWB 'over and above' the effects of personality. They argue that each person has his / her 'normal' level of events rate and SWB level. As long as events occur in usual frequency, SWB is not affected. However, if the usual frequency is modified, the equilibrium will be disturbed, and SWB changes. It is stable personality that is responsible for bringing the system back to equilibrium, which may, however, lie at another level than before; they call this phenomenon cumulative effect of life events. In other words, bounce back to earlier levels of SWB may not be complete.

Another theoretical framework which considers the effect of life events, *hedonic treadmill theory* (Brickman *et al.*, 1978), claims that even the most dramatic experiences, such as becoming disabled as a result of an accident or winning a large sum in a lottery, have much less impact on subjective well-being than might be expected. After a short amount of time lottery winners derive less pleasure from everyday activities and are only insignificantly happier than the control group. Although the data on injured individuals provided less support for the adaptation model (accident victims remained in the long run significantly unhappier than the control group; they were, however, more positive about events in their past), the authors claimed that people's reactions to dramatic events bear transitory character.

Personality theory, dynamic equilibrium theory, and hedonic treadmill theory are subsumed under the label of *set-point paradigm* (Heady, 2010). Set-point paradigm implies *stability* of SWB levels and little potential for long-term improvement, whereas the livability theory suggests that taking adequate societal measures will make people happier.

Accumulating evidence on complete adaptation to various life events was once thought to be a source of pessimism with regard to the potential of a long-term improvement in SWB (e.g., Lyubomirsky *et al.*, 2005). Indeed, if adults' SWB fluctuates

from the baseline only temporarily, there is no point in striving for higher income or higher status, or undertaking major life changes. An improvement in macro-level conditions can not help either. Further research, however, revealed the necessity to revise the theory. Diener, Lucas, and Scollon (2006) formulated five major criticisms of the set-point paradigm. First, they argue that individual set-points are not hedonically neutral (i.e., at the theoretical mean of the scale); instead, people are rather happy most of the time. Second, people have different (mostly, hedonically non-neutral) set-points. Next, SWB comprises several dimensions, such as positive affect, negative affect, and life satisfaction; thus, a single individual can have multiple SWB set-points. Next, set-points can change under the influence of objective living conditions. Finally, in certain cases set-points can change due to external events.

This thesis investigates the influence of life events on SWB dynamics. Nowadays, in the times of life-course individualization, life events become more and more a matter of a private choice; in response to widening opportunities to choose, feelings of agency gain greater weight in shaping SWB (Welzel & Ingelhart, 2010). Making the right choice, prolonging the effect of a positive development, and lessening the impact of negative events are important pathways to maximizing SWB which deserve thorough scrutiny.

2 Hedonic Adaptation

2.1 Definition

> *'I have an unfortunate character. Whether it is my upbringing that made me like that or God who created me so, I don't know. I know only that if I cause unhappiness to others I myself am no less unhappy. I realize this is poor consolation for them--but the fact remains that it's so. In my early youth after leaving my parents, I plunged into all the pleasures money could buy, and naturally these pleasures grew distasteful to me. Then I went into high society, but soon enough grew tired of it; I fell in love*

> *with beautiful society women and was loved by them, but their love only aggravated my imagination and vanity while my heart remained desolate . . . I began to read and to study, but wearied of learning too. I saw that neither fame nor happiness depended on it in the slightest, for the happiest people were the most ignorant, and fame was a matter of luck, to achieve which you only had to be clever. And I grew bored . . . Soon I was transferred to the Caucasus--this was the happiest time of my life. I hoped that boredom would not survive under Chechen bullets--but it's no use. In a month I had become so accustomed to their whine and the breath of death that, to tell the truth, the mosquitoes bothered me more, and life became more boring than ever because I had now lost practically my last hope.'*
>
> *M. Lermontov. The Hero of Our Time*[9]

In Soviet literature studies, the hero of Lermontov was interpreted as an illustrious example of the despondency and misery of idle nobility. A special term – 'useless people' – was coined to describe this prototypical character. The context he lived in was blamed for making it impossible for a young educated person to develop his capacities and serve a valuable societal purpose. Nowadays, a SWB researcher would ascribe the suffering of the young man to the phenomenon of *hedonic adaptation*.

Hedonic adaptation may be defined as a reduction in the affective intensity that is affected by favorable and unfavorable circumstances (Frederick & Loewenstein, 1999). Adaptation is a blessing when we have to deal with potentially damaging experiences, such as losing a job or a loved one, but it has its downside as well – the pleasure initially derived from positive changes, such as buying a bigger house, increase in income, or even forming a romantic relationship, fades over time. Even though hedonic adaptation is sometimes viewed as an obstacle to long-term improvement in SWB, it serves several important functions. Firstly, it may divert our resources away from other

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[9] Moscow: Progress Publishers 1947. Translated from Russian by M. Parker

important domains; for example, in a highly adverse situation (e.g., painful romantic breakup) people experience strong emotional reactions, focus on them and tend to ignore whatever else happens in other life domains, such as work or studies. Such a state of mind, when prolonged, might lead to an overall deterioration of functioning. Due to hedonic adaptation, however, we rescale our evaluation of the situation, start to reacknowledge the importance of subtle changes in various domains (e.g., success at work, improvement in financial situation), and become motivated to improve the overall situation (Frederick & Loewenstein, 1999). Secondly, the effects of new events overwrite past ones, because new events provide new information which helps individuals in guiding their behavior and finally leads to more efficient functioning (Suh *et al.*, 1996). Thirdly, intense affective reactions may be dysfunctional, because they prevent other coping processes (cognitive and behavioral) from taking place (Dijksterhuis & Smith, 2002). Last, but not least, a persistently strong hedonic state may have detrimental physiological consequences.

2.2 Can People Regulate Their Hedonic Adaptation? Paths and Mechanisms of Affective Habituation

The ultimate goal of SWB research is to obtain valid information on how we optimize happiness or life satisfaction. When it comes to life events, the question of primary interest is how do we lessen and shorten the detrimental impact of bad events, and amplify and prolong the positive impact of good events. Several strategies of managing the effect of critical experiences (and corresponding lines in research) can be outlined. One strategy is recognition of positive activities /events with slower adaptation rates and focusing on them. Some activities simply have longer lasting hedonic effects than others; for example, people adapt faster to increases in material standards of living

than to being with significant others[10] (Easterlin, 2005); thus, the advice would be to invest more time and effort in maintaining social networks. Moreover, hedonic adaptation seems to go faster in the case of circumstances change, rather than in the case of a change in personal actions (Sheldon & Lyubomirsky, 2006)[11]; thus, instead of moving to a better place, one might consider implementation of a rewarding activity, such as, for example, physical exercise, in a daily routine.

Another path of SWB regulation could be the accumulation of relevant resources which help to maintain positive SWB outcomes even when facing potentially damaging circumstances. Resources are discussed in more detail in Section 4 of the Introduction.

Finally, hedonic adaptation can be regulated with the assistance of intentional strategies of cognitive transformation. Basically, this strategy consists of two subordinate components: slowing down adaptation to positive events and fostering adaptation to negative ones. What are the cognitive mechanisms that lead to hedonic adaptation? *Change in aspirations* is one of the central adaptation mechanisms, which often occurs as a result of changes in the actual situation[12] (Easterlin, 2005). This idea refers to Kahneman's (1999) notion of the "satisfaction treadmill", which is linked to the adjustment of the comparison standard to the newly attained level. As the pleasure gained from some positive development increases, the aspiration level follows; in the end, people start to require this higher level in order to simply sustain their baseline happiness. Changes in aspirations can be regulated, though: an individual may actively adjust the personal system of aspirations to the situation (for example, by focusing on downward social comparisons and avoiding upward ones) in order to keep the gap between aspira-

[10] The finding has been obtained in a highly developed industrialized society (the USA); as material well-being matters more in poorer countries (Delhey, 2010), adaptation to an increase in standard of living might go at a different pace there.

[11] The distinction between these two types of sources of adaptation seems rather superficial, however, since changes in circumstances may involve a great deal of personal effort.

[12] E.g. after receiving an increase in salary, people raise their material aspirations; thus, the gap between the aspirations and the actual state remains, preventing them from enjoying higher income.

tions and achievements small and maintain the positive effect of a desirable development (Brandtstädter, 1992).

Attending is another mechanism, which is emphasized within several theoretical models of adaptation (e.g., AREA, HAPNE). According to the AREA model (Attend, React, Explain, and Adapt; Wilson & Gilbert, 2008), "the extent to which emotional events remain in focal attention, is a critical determinant of the speed of affective adaptation" (p.371). Keeping attention on a positive change may be deliberate; this is a desirable activity that slows down adaptation to positive events. For example, in order to profit longer from a good event, one might employ a strategy such as expressing gratitude; by implementing this technique, the individual continues to attend to the good event.

Another central mechanism of hedonic adaptation is *explanation*; explaining the event encompasses determining the causes and consequences of it, as well as incorporating the event into one's self-concept and the system of personal goals (Taylor, 1983; Wilson & Gilbert, 2008). Finding meaning in the experience fosters recovery from marital dissolution, death of spouse (Bonnano *et al.*, 2002), or illness (Taylor, 1983). Interestingly, cognitions, which help to explain the event, do not necessarily need to be objective representations of reality; they may well be illusionary and still play a positive role for SWB (Taylor, 1983).

Reappraisal (e.g., Sirgy, 2002) implies reconsidering the importance of life domains according to one's own successes and failures; for instance, a person can better adjust to a failure at work if she starts placing higher value on family or community involvement. Besides cognitive transformation techniques, fostering adaptation to negative events might be achieved by seeking social support, withdrawal, or self-reward (see Larsen & Prizmic, 2008, for review).

The insight into the process of adaptation regulation implies that hedonic adaptation is not an iron law of psychological functioning. Rather, there is a great amount of variability in the speed and degree of adaptation, depending on the event and the effort invested into achieving a higher level of SWB.

2.3 Measurement of Hedonic Adaptation Outcome

To trace hedonic adaptation, both objective and subjective measures are used. The group of objective indicators comprises the physiological reaction, like blood pressure, for instance (e.g., Cohen *et al.,* 1980). Other possible objective measures include undergoing (quitting) psychiatric (psychotherapeutic) treatment, or, modified consumption preferences (Frederick & Loewenstein, 1999). Changes in performance on cognitive tasks and attention measures are also used to measure the outcome of adaptation.

Subjective (based on self-reports) indicators include 1) overall well-being measures, such as life satisfaction, happiness, affect balance scales (e.g., Suh *et al.*, 1996), depression scales (Bonnano *et al.*, 2002; Burke, 2007), 2) scales for the evaluation of discrete affective stimuli with regard to their valence (e.g., 'positive-negative'), and 3) subjective evaluations of physiological states, such as pain thresholds and pain tolerance.

The implementation of evaluation scales (e.g., 'positive-negative') into experimental studies of adaptation is based on the idea that affective habituation has taken place once affective stimuli are perceived as less extreme after multiple exposure. For example, in experiments on affective habituation to subliminal stimuli (Dijksterhuis & Smith, 2002), participants were exposed to extreme positive and negative words and later asked to evaluate them on a 7-point 'positive-negative' scale, together with control words that had not been presented previously. The difference in evaluation is treated as an indicator of adaptation.

When overall SWB measures are used as proxies for adaptation in large-scale surveys, individuals may be asked to report their current state, like in the Day Reconstruction Method (Kahneman *et al.*, 2004) or Experience Sampling (Scollon *et al.*, 2003), recall past states, or form an aggregate judgment across a certain time span. The aggregated scores are not simple accumulations of the moment-based reports; they represent two distinct measures – moment-based and memory-based evaluations (Kahneman, 2004), which do not invalidate or substitute each other. Large-scale panel datasets rely on the memory-based aggregated judgments.

3 Adaptation to Critical Life Events: Empirical Evidence

3.1 Critical Life Events: Definition

Interest in critical life events has a long history in life span psychology, life-course sociology, coping research, and personality research. In psychology, besides event-centered studies which focus directly on reactions to specific events, a great deal of research has been done within so-called variable-centered and theory-centered frameworks (Inglehart, 1991). While variable-centered research focused on moderators (for example, personality traits) of reaction to a critical life event, the theory-centered research sought explanations to reactions to important events in terms of universal cognitive, emotional, and physiological mechanisms. For example, coping research attempts to describe and classify efforts and strategies that individuals develop in response to some dramatic experiences. Also, this research tradition analyses the efficiency of coping efforts depending on certain characteristics of events, such as valence, timing, predictability, controllability, desirability, and sequence (Brim & Ryff, 1980). Besides coping research, the theory-centered studies include, for example, stress theories, cognitive theories (e.g., Taylor, 1983), developmental theories (e.g., Bowlby theory of attachment and loss, Bowlby, 1969), and life span theories (e.g., Baltes *et al.*, 1998). Depending on

the research paradigm, the term 'critical life event' is defined differently. From the cognitive perspective, "a critical life event is an event that is inconsistent with that part of a person's worldview on which the person's attention is focused" (Inglehart, 1991, p.6). From the developmental perspective, a critical life event is a "major change in an individual's developmental ecology that present a substantial stress to the individual's well-being and therefore involves major coping responses" (Heckhausen, 2005, p. 184).

In life-course sociology, two key concepts overlap with the notion of 'critical life event' – transition and turning point. *Transition* is not *any* event, it involves change in social role, such as taking a job, getting married, becoming a parent (Elder *et al.*, 2003). *Turning point* refers to an experience that leads to a change in a previously established life trajectory. Turning points may coincide with some event, but not necessarily; sometimes, they occur due to the gradual accumulation of minor changes and are not associated with any one particular event (Elder *et al.,* 2003).

This thesis focuses on transitions related to family and labor-force status, namely, marriage, birth of child, divorce, widowhood, and unemployment. The selection of these events was based on two reasons. First, we aimed to contribute to a particular field of hedonic adaptation literature (which is represented, for example, by the work of Clark *et al.*, 2008); in order to stay in line with this literature, we therefore selected the same life events that shaped the mainstream of this research perspective. Second, we sought events that are well recorded in the available long-run panel datasets. In the following section we briefly outline the major findings in the existing literature on adaptation to the events that are considered in this thesis.

3.2 Empirical Evidence of Adaptation to Family and Labor Market Events

The analysis of the SWB profile around events can be carried out using any of the following research designs: a) cross-sectional studies, b) post-event (retrospective)

longitudinal studies, and c) "large-scale" longitudinal studies, in which individuals are usually interviewed every year, and which allow the SWB trajectory to be traced out both before and after the event in question.

There are by now a very large number of cross-sectional analyses which have revealed systematic differences in SWB with regard to family and labor-force status. In general, married individuals are happier than single, cohabiting, separated, divorced, or widowed ones; this finding is stable when age, labor-force status and income are controlled for (e.g., Argyle, 2001; Diener *et al.*, 2000; Graham *et al.*, 2004). Diener *et al.* (2000) note that the same pattern pertains in 42 countries. The results with respect to children and SWB are more controversial than those regarding marital status. Based on a meta-analysis, Argyle (2001) concludes that the stages of family life cycle when children are present in the household are associated with lower subjective well-being. Also, Cummins (2003) shows that Personal Well-Being Index scores are lower for respondents with children.[13]

However, cross-sectional analysis has a number of serious limitations. First, it does not inform us about causal relationships between the variables under consideration. In general, these kinds of analyses implicitly assume that happiness is a dependent variable, with the right-hand side variables in the equation are being considered as exogenous, or as *sources* of well-being. The causal path is therefore assumed, but is not checked empirically.[14] There is, however, a good chance that self-selection is acting alongside any causal effect of the events on SWB; that is, not only events influence SWB, but the level of SWB affects the probability of certain experiences. Individuals

[13] It is important to bear in mind, however, that this dip might reflect the well-documented middle-age decline in SWB rather than presence of children.

[14] To illustrate, there is a negative correlation between Body Mass Index and well-being scores. However, we cannot conclude from this that overweight people become unhappier as their bodies increasingly do not comply with social norms. It could equally be the case that unhappy people are more prone to additional food consumption.

with higher happiness scores have better chances on the marriage market (Lucas *et al.*, 2003; Graham *et al.*, 2004; Stutzer & Frey, 2006). Equally, happier individuals are more likely to stay married, whereas divorcees have initially lower levels of SWB (Lucas, 2005). Second, cross-sectional analyses do not tell us whether the relationship between events and SWB is temporary or permanent in nature. Thus, any correlations between family and labor-force status and SWB may well then plausibly reflect either selection effects, or short-term effects following the transition, which will dissipate over time.

The growing availability of large longitudinal datasets allowed for the within-subject analysis of SWB dynamics, thus, making it possible to address both of these alternative readings of the cross-sectional findings. Retrospective studies are based on multiple measurements of SWB after an event (e.g., imprisonment, winning the lottery, or disability as a result of an accident) has taken place (see Frederick & Loewenstein 1999, for a review). This approach, which is rather common in coping research, certainly tells us more about the effect of an event on SWB, but critically can not take into account the individual's pre-event level of well-being. However, the event itself and the individual's reaction to it do not tell the whole story; significant life events may not always be totally unexpected, but can to a certain degree be anticipated. It is therefore important to capture the dynamics of SWB during the *anticipation* stage before the transition actually takes place. A purely retrospective approach precludes this possibility.

The analysis of well-being with long-run large-scale panel data allows us to look at level changes in SWB before, during, and after the event in question. This empirical approach is the method of choice, as it arguably allows us to better deal with causality, anticipation, and the long-term effects of an event. Also, such samples suffer much less

from selectivity[15] as they are usually randomly drawn from the whole population; this feature makes it easier to generalize the results.

Using longitudinal data for the analysis of the well-being effects of ***marriage*** has yielded mixed findings. While the contemporaneous reaction to marriage has been found to be uniformly positive, there is an ongoing discussion about whether marriage leads to a permanent (or, at least, a long term) rise in SWB. There is evidence of both complete adaptation to marriage within the first two years (Lucas *et al.*, 2003; Clark *et al.*, 2008; Clark & Georgellis, 2010) and a persistent effect of union formation within the same two-year period (Zimmermann & Easterlin, 2006). It is possible that these divergent results partly reflect the implementation of different methodological techniques.

Birth of child is potentially associated with both positive and negative well-being outcomes. The anticipation of birth of child is associated with higher levels of well-being, especially for women; however, the actual experience of having a child has a more ambivalent relationship with SWB, at least in the first years after the first child is born. The initial reaction to the event, estimated on different datasets but with a similar methodology, may be positive (Frijters *et al.*, 2010) or negative (Clark *et al.*, 2008; Clark & Georgellis, 2010).

Divorce, on the one hand, is associated with some important correlates of low SWB, such as more risky health behaviors (e.g., increased alcohol consumption, in Amato, 2000; Forste, 2004; Gahler, 2006), and a lower standard of living, especially for women (Andress & Bröckel, 2007). On the other hand, marital dissolution may lead to greater autonomy, career, and personal growth, especially for women (Amato, 2000). However, despite these potential positive outcomes, divorce does represent a challenge to the well-being equilibrium and is often preceded by longer or shorter period of lower

[15] Sample selectivity is a vexed issue in a large number of studies on adaptation to life events, since samples are often drawn from individuals who sought psychotherapeutical help.

happiness, the so-called anticipation period (Clark *et al.*, 2008). Contrarily to earlier work, which persistently found negative effects of marital dissolution on psychological well-being (Lucas, 2005), more recent analyses find rapid and complete adaptation to divorce (Clark *et al.*, 2008; Clark & Georgellis, 2010; Frijters *et al.*, 2011). Similar to the case of marriage, such divergence in findings may be due to the differences in analytical strategies and the use of different samples.

Adaptation to ***widowhood*** occurs on average fairly quickly, and looks like it follows a curvilinear pattern, being faster immediately following the loss, and subsequently slowing down over time (Burke *et al.*, 2007). Patterns of bereavement differ greatly between individuals (Bonanno *et al.*, 2002; Bonanno *et al.*, 2004; Burke *et al.*, 2007): in particular, recovery,[16] which was previously viewed as a universal reaction, is now distinguished from resilience,[17] with the latter being far more common than was once presumed (Bonanno *et al.*, 2004).

Unemployment is an event to which individuals (especially men) exhibit only little adaption (Winkelmann & Winkelmann, 1998; Clark *et al.*, 2008). Moreover, the analysis of repeated events (Luhmann & Eid, 2009) reveals that subsequent unemployment spells have even larger effects on SWB, that is, we observe *sensitization*.

The literature that relies on large-scale panel datasets has so far primarily been concerned with establishing the sheer fact of adaptation to a given experience (i.e., whether people adapt to the event, or not). This objective led to a research design which treated all events (and individuals) as if they were the same. For example, since panel datasets usually provide only *annual* measurements of SWB, this design implies that the target event may have happened during any one of the 12 months before the

[16] A trajectory in which normal functioning temporarily gives way to threshold psychopathology, and then gradually returns to the pre-event level (Bonanno *et al.*, 2004).
[17] Resilience refers to the ability to maintain a stable well-being equilibrium (Bonanno *et al.*, 2004).

interview. As we know that sometimes only recent events have significant effects on SWB (Suh *et al.*, 1996), averaging scores of SWB across a one-year time span may be too coarse a measure for some events. While the calculation of average adaptation profiles is certainly of interest, it does not necessarily tell us much about what each individual experiences at different stages of adaptation, as there is substantial variability in the strength of the well-being reaction to life events, depending on the characteristics of the *person* and the *event*.

4 Resources and Adaptation to Life Events

4.1 Plasticity of Human Development

An individual's adaptation trajectory reflects the degree of *plasticity.* Plasticity refers to "the ability to adapt to changes in contextual circumstances, that is, to change with regard to specific aspects of the organism (e.g., traits) in order to preserve central characteristics of the organism, for example, environment-controlling capacities, general well-being, or health" (Staudinger *et al.*, 1995, p. 810). The degree of plasticity depends on an individual's reserve capacity – sum of the resources available to the individual at any given time (Staudinger *et al.*, 1995). Resources may be broadly defined as "material, social, or personal characteristics that a person possesses that he or she can use to make progress toward her or his personal goals" (Diener & Fujita, 1995, p. 926). Resources are crucial for regulating and maximizing well-being; resource change in the face of stressful challenges is a key operating mechanism by which well-being is influenced (Hobfoll, 2002). Among numerous known mechanisms by which resources act (see Hobfoll, 2002, for review), the following are of primary interest for the analysis of the adaptation process: a) people with resources are less likely to encounter stressful circumstances that negatively affect well-being; b) those who possess resources are more capable of solving the problems inherent in stressful circumstances; c) those better en-

dowed with resources are less negatively affected by the resource drain that occurs in the face of stressful circumstances; d) resources are linked to other resources (resources form 'caravans').

Resources do not bear a universal nature. In resource theories, the idea of cultural constancy (i.e., the tendency to generalize the prevalence of certain resources that fit in one culture to other cultures), has been gradually replaced by the principle of historical embeddedness (Hobfoll, 2002). According to the personality-environment fit theory (French *et al.*, 1974), resources are beneficial to the extent that they meet environmental demands; it is not the degree of stress that people encounter and their coping capacity, but rather the degree of fit between demands and coping abilities. Resources that are important in one context might not be of any value in another setting. Both socio-structural and psychological characteristics might "show different effects depending on the larger cultural context in which they are embedded" (Baltes *et al.*, 1998). Social support, for example, could be more salient in a society with weak welfare provision; income is more significant in a transitional economy compared to a highly-developed country (e.g., Delhey, 2010), internal control beliefs are more important in a society which provides a context richer in behavior-outcome contingencies (Staudinger *et al.*, 1999), etc. A particular cognition (e.g., an internal attribution) might be functional in one situation, but not so in another (Taylor, 1983).

The thesis is based on a rather simple model of the interrelation between life events, resources and SWB. Life events and SWB are assumed to have a reciprocal influence on each other. The trajectory of SWB is modified by an event. The degree to which it is altered depends on the external and internal resources available to the person.

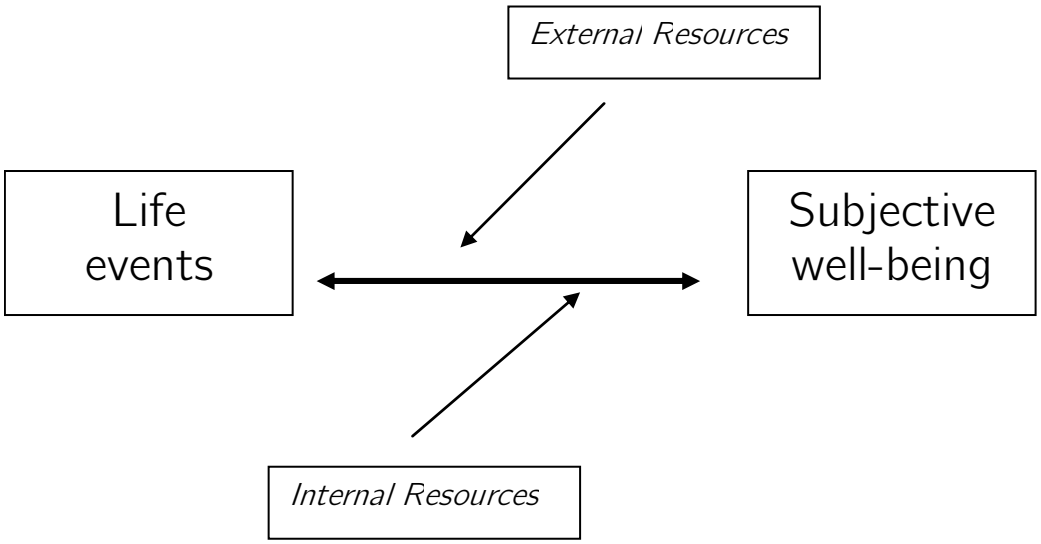

Figure 1. Schematic Depiction of Interrelation between Life Events and SWB

4.2 Resources and Adaptation to Life Events: Empirical Evidence

As discussed above, while the estimation of the average effect of a life event on SWB provides some valuable information, there is substantial variance in the strength (or even valence) of the well-being reaction to life events depending on the individual's resources.

Internal and external resources can be linked to the SWB profile following life events in a number of different ways. First, each event itself either deprives an individual of certain resources (for example, divorce may be detrimental for financial well-being, especially for women), or, on the contrary, provides them with additional protection (e.g., marriage yielding emotional support). This enrichment / impoverishment of resources will in turn have an effect on SWB. Here, resources act as *mediators* of the change in well-being. Second, the speed and degree of adaptation to a given life event will depend on the availability of various resources (adaptation to divorce may be easier with an adequate income, for example). Here resources *moderate* the adaptation process. Overall, both the initial reaction to the event and the post-event SWB dynamics

will likely depend on the change in available resources from before to after the transition. We provide below a brief review of the principal known mediators and moderators of hedonic adaptation.

Following Staudinger and colleagues (2005), within this project we divide all resources into two groups – internal (psychological) and external (non-psychological), although the distinction is relative.[18] Internal resources include age, gender, health structural personality characteristics and regulatory processes, while the cluster of external resources is formed (primarily) by the socio-economic characteristics.

Internal Resources

Gender is not a resource *per se*, but might be thought to facilitate or complicate access to certain resources, and as such gender will moderate the well-being effect of the event. For example, gender often affects the individual's chances on the labor and the marriage markets[19]. Moreover, men and women acquire different coping styles via the socialization process. Women are more likely to engage in self-focused, ruminative responses to a depressed mood; this tendency to ruminate is associated with longer and more severe periods of depressed mood in women than in men (Nolen-Hoeksema, 1995).

The effect of *age* on the adjustment process is twofold. First, chronological age can affect the person's access to other important resources (e.g., chances on the labor market). Also, frequency of an event in a certain age group may foster or slow down the speed of adaptation: for instance, becoming a widow at a younger age makes it more difficult to adapt to the partner's loss. Second, belonging to a certain cohort

[18] For example, social relations, albeit placed here in the category of external resources, are certainly not entirely defined as external structural opportunities available to the individual, but also by the person herself.

[19] For example, due to unbalanced gender structure in the population.

might influence the meaning of an event (e.g., marriage or divorce) for the individual, because members of different cohorts adopt different values during socialization.

Personality, as an internal resource, works in a number of different ways. First, personality dispositions alter the *probability of events*. It has been claimed (Suh *et al.*, 1996; Heady, 2008) that life events are not entirely exogenous, but partly endogenous. Frequencies of events (both positive and negative) are characterized by a high level of stability within individual lives (e.g., Suh *et al.*, 1996)[20]. Moreover, positive and negative events seem to occur at similar rate: those people who report more good events also report more bad ones. Headey (2008) shows that the probability and stability of events rate depends on personality traits like extraversion and neuroticism. People with high degrees on both scales tend to experience more events, both positive and negative ones, but for extraverts the positive events have greater magnitude, whereas neurotics tend to assign more importance to negative events. As a result, high neuroticism might lead to a decrease in subjective well-being in the long run, whereas high extraversion is likely to increase it. Second, our *choice of coping strategies* may well be influenced by personality dispositions. Neurotic individuals are more likely to engage in ineffective coping strategies, e.g., denial, whereas extraverts choose more effective ones, such as the search for social support (e.g., Ferguson, 2001).

Besides extraversion and neuroticism, other dispositional characteristics which contribute to successful coping have been identified. Such coping resources include *self-efficacy* (Bandura, 1997), *optimism* (Taylor *et al.*, 2000), and *self-complexity* (Linville, 1987).

Cognitive regulatory processes that promote adaptation to a shattering situation include: a) reappraisal and reinterpretations of stressful situations , b) adjustment of the

[20] They found, for example, a correlation of around 0.5 between positive events frequency from one time interval to the next (2 years later).

personal preferences and aspirations (Brandtstädter, 1992), c) managing social comparisons (Greve & Staudinger, 2006; Taylor *et al.*, 2011), d) managing causal attributions (e.g., Roesch & Weiner, 2001), e) generating counterfactuals (i.e., constructing alternative possible images – better or worse – of the actual situation; Frederick & Loewenstein, 1999)[21], and f) gaining the sense of mastery (i.e., the feeling of being able to control or influence outcomes; Taylor & Stanton, 2007). It is important to mention the two-way causal link between the aforementioned regulatory processes and SWB. That is, not only certain attributions or comparisons facilitate or inhibit restoring of SWB equilibrium in a stressful situation, but also the initial (i.e., pre-event) level of SWB influences the ways in which individuals respond to the situation. For example, people with higher levels of SWB perceive and interpret daily situations in more positive ways (e.g., seeing humor in an adverse situation), and are less sensitive to social comparison information (Lyubomirsky & Ross, 1997; Lyubomirsky & Tucker, 1998).

Health dysfunction serves as a risk factor in adaptation to marriage, divorce, loss of the partner (Mancini *et al.*, 2008), and retirement (Pinquart & Schindler, 2007). Moreover, health influences the possession of other important protective resources, primarily, income (Oswald & Gardner, 2006).

External Resources

Socio-economic status. Income, education level, and employment status are important protective resources, which lessen the detrimental impact of stressful events, such as divorce (Wang & Amato, 2000) and retirement (Schindler & Pinquart, 2007).

Social support and close high-quality relationships have been shown to be another protective resource, which help individuals to cope with life shocks (Taylor &

[21] Simply generating negative counterfactuals ("Things could have turned out much worse") does not directly affect our reference points and SWB. Frederick and Loewenstein point out that these counterfactuals must be "plausible, not just possible" alternatives to what had actually happened.

Stanton, 2007). Despite the critical importance of social support and social contacts, their protective potential may not always be realized. Frederick & Lowenstein (1999) note that social contact with others who have not had similar experiences may even hinder adaptation, as the support provided in this case may take inadequate forms.

The broad socio-economic and cultural *context* affects the adjustment profile in a number of ways. The socio-cultural context supplies individuals with meaning and possible explanations of their life experiences. Finding meaning from an experience is one of the ways in which individuals can adapt to it (Wilson & Gilbert, 2008; Bevvino & Sharkin, 2003; Bonanno *et al.*, 2002). Public discourse on the event in question may 'offer' only few or many possible explanations (also, the explanations on offer may be more or less favorable for the Ego), and therefore make it easier or harder to explain the event. Another contextual feature that moderates the relationship between life events and well-being is the *societal pervasiveness* of the event. This type of social-norm effect has been identified with respect to male unemployment in the UK (Clark, 2003) and Germany (Clark *et al.*, 2010): the negative well-being impact of unemployment is attenuated in regions with higher unemployment rates.

Unfortunately, due to the data constraints, we were not able to investigate the mediating and moderating effects of all the aforementioned resources. In our analyses (primarily, in Studies 2 and 3) we limit the list of resources to gender, age, control beliefs, income, education, health, and close relationships.

5 The Contribution of the Thesis

Today, there are two major trends in the hedonic adaptation literature, existing, to a large extent, in parallel. One trend, which has been developing predominantly within economic research, relies on large long-run nationally representative panel datasets, which are extremely helpful in dealing with such issues as selectivity and anticipa-

tory stage of adaptation. Up to recently, the focus was on depiction of the overall average adaptation trajectory for a whole population. Moreover, events have been treated by and large in the same way, regardless of their properties. Such a strategy might be efficient if the task is only to establish the fact of adaptation to a given experience. It might be insufficient, however, if one wants to gain deeper insights into the process of adjustment, for example, to obtain more precise estimations of SWB changes for each event, or to analyze the variability of adaptation profiles across individuals. One major drawback of these data is that SWB is usually measured annually, which makes it difficult to depict the adaptation trajectory based on shorter time intervals (e.g., Clark *et al.*, 2008). To our knowledge, only one study (Frijters *et al.*, 2010) based its analyses on quarterly, instead of annual, intervals.

The second trend (which has been mainly developing within coping research) often relies on small samples, when individuals are followed for much shorter time spans, usually covering only the post-event period. Such studies often provide a more precise picture of the adaptation profile (as they measure SWB more frequently than once a year) and shed some light on inter-individual variability. The samples within this tradition usually focus on individuals who experienced one particular event, such as serious illness (e.g., Taylor, 1983), death of a loved one (Wortman & Silver, 2001), cosmetic surgery, imprisonment, becoming disabled (see Frederick & Loewensten, 1999, for a review), or, individuals who sought professional help (e.g., seeing a counselor in the case of divorce; e.g., Kressel, 1980). Thus, the degree of generalization is limited.

5.1 Conceptual Contribution

We aimed to bridge the two aforementioned research trends by using large-scale nationally representative datasets and applying a more micro-analytical approach at the same time. By micro-analytical approach we mean "applying a magnifying glass" on a)

timing of events, b) individuals, and c) countries. The aim of the thesis was threefold. First, by applying greater temporal resolution on the timing of events, we explored whether the methodology commonly used in the hedonic adaptation literature is useful for all events, independent of their characteristics. Second, we explored inter-individual variability in the reaction to a critical life event (divorce); we argue that the SWB trajectory is contingent on the resources the individual has available. Last, we explored the cultural consistency of resources by comparing two countries – Germany and Russia. These are the issues that have been, by and large, ignored by the economic research on hedonic adaptation. Two panel datasets, German Socio-Economic Panel (GSOEP) and Russian Longitudinal Monitoring Survey (RLMS) were used in this thesis. An overall measure of SWB, namely, *life satisfaction,* was used as a proxy measure of tracing hedonic adaptation.

Within the classical hedonic treadmill model, adaptation was conceptualized as a return to the pre-event level of SWB after the event-related disequilibrium. However, even when the level of SWB remains stable, it does not mean that additional resources are not employed in order to maintain equilibrium in psychological functioning (Staudinger, Marsiske & Baltes, 1995; Greve & Staudinger, 2006). Thus, even when SWB before and after the event remains stable (i.e., no visible change is identified), it does not signify the absence of a psychological reaction; rather than that, such a SWB profile depicts another adaptation pattern, different from the one originally described by the hedonic treadmill model. Therefore, instead of applying the term 'hedonic adaptation' to one particular pattern of event-related SWB dynamics (i.e., diversion of SWB from the individual-specific baseline, followed by a gradual return to the pre-event level), we used the concept of 'hedonic adaptation' to describe any kind SWB dynamics invoked by an event.

5.2 Analytical Methods

For the analysis of the data we sought statistical methods that allow compensating for certain shortcomings of cross-sectional studies. One such shortcoming is unobserved heterogeneity. Unobserved characteristics may bias the results, by being correlated with both the independent and the dependent variables. For example, social skills may influence both the probability of getting unemployed or married, as well as life satisfaction. Second, when a time span which encompasses several years before and after the event is considered, one can not be sure that SWB dynamics during this period is related solely to the dramatic experience the person faces. Thus, the analysis would be much more correct if the chosen methods allowed disentangling the event-related SWB changes and those unrelated to the event.

Contemporary methods of panel data analysis offer adequate solutions for these problems. We employed two analytical strategies: regression analysis with fixed and random effects (the Mundlak specification), and latent growth mixture modeling. Modeling with fixed effects and the Mundlak model allows controlling for unobserved heterogeneity, that is, time-invariant characteristics, even if we do not measure them. The fixed effects model relies on *within-person variation* and controls for time-invariant characteristics (e.g., personality, gender, etc.). This model is only capable of estimating the effect of *time-variant* characteristics on SWB. The advantage of the Mundlak model, in contrast to the fixed effects model, is that it is also capable of estimating the effect of time-*invariant* variables.

The latent growth mixture model tests whether the sample consists of distinct classes of individuals, following different growth trajectories. The main advantage of this method for our purposes is that it allows differentiating the overall changes in SWB from the event-related changes (Pinquart & Schindler, 2007).

5.3 1st Study: Temporal Resolution Makes a Difference

Hedonic adaptation is the function of time. When building an adaptation profile, SWB is measured at several points in time (i.e., at several distances from the event). The degree of the adaptation profile precision depends on a) the number of measurement occasions, and b) distances between measurement occasions (i.e., time intervals, which are used). Depending on the type of event, for building an accurate adaptation trajectory it matters which time intervals are chosen.

The 1st study addressed the precision of the temporal localization of the event. The existing literature mostly relies on large-scale data sets, which usually provide only annual measurements of SWB. This design implies that the target event may have happened during any one of 12 months in question and that as a consequence participants, who may be at quite different points in their adaptation process, are treated as if they were alike with regard to the adaptation stage. This creates imprecision when it comes to the analysis of the adaptation process.

The study suggested a method to reduce that imprecision. It profited from availability of the monthly records on important life events (marriage, birth of child, divorce, widowhood, and unemployment) in the SOEP data. In this study we used information about the actual *quarter* of the event rather than the year of the event as is common in the literature; furthermore, we implemented a formal test to compare results obtained with the quarterly data and the yearly data. With such 'higher resolution' we a) obtained more precise patterns of SWB dynamics within the first year following the transition, and b) compared events with regard to their sensitivity to quarterly timing.

A number of theoretical frameworks argue that *valence* of an event is a factor of adaptation speed, and distinguish between positive and negative events. The prospect theory argues that losses have a bigger impact on behavior, well-being and decision-making than gains (Kahneman & Tversky, 1984). According to the AREA model of

hedonic adaptation (Wilson & Gilbert, 2008), habituation to positive events goes faster, because people are less likely to attend to them, exhibit weaker emotional reactions, and find explanations much easier. Numerous approaches have addressed the asymmetry between contributions of positive affect (PA) and negative affect (NA) to SWB; this asymmetry was labeled as 'negativity bias' – a phenomenon of the NA system being more reactive and producing a larger response than the PA system (see Larsen & Prizmac, 2008 for a review). Given these considerations, we expected to find that the precision of the temporal localization is more important for negative events.

5.4 2nd Study: A Mean Level Trajectory Conceals Multiple Adaptation Paths

Averaging across a whole population, albeit valuable, conceals groups of individuals who considerably differ in their event-related SWB dynamics. We argue that critical life events do not invoke a uniform reaction; instead, the population consists of distinct groups of individuals, who follow different adaptation profiles. The adaptation profile is contingent on resources that are available to the individual. We hypothesize that resource-rich individuals are more likely to maintain the well-being equilibrium while facing dramatic life circumstances.

The 2nd study focused on one critical life event – divorce. Marital dissolution was chosen for the analysis because of the high variability of its potential outcomes. Such variability is due to several reasons. First, the public perception of divorce has been changing, thus, different cohorts and milieus can have rather opposite opinions on divorce. Second, divorce can be voluntary or involuntary, which might result in a large divergence in the utility derived by the former partners. Although the coping literature has lately provided a number of important findings on adaptation to divorce, a large part of them came from small-scale selected samples. As a result, the literature tends to overestimate the frequency of certain (i.e., negative) outcomes of marital disruption.

We profited from availability of a long-run data on SWB of a large number of divorced individuals in the GSOEP. The main research questions in the study were 1) what are the typical adaptation profiles in the case of divorce, and 2) which resources play a role in the development of a certain outcome.

5.5 3rd Study: Adaptation Depends on Social Structure

This study continued to explore variability in reaction to divorce, but brought in a new dimension – cross-cultural constancy of resources. Although research on adaptation to divorce over the past few decades has provided us with valuable information on the role of personal resources, very little is known about how the broader context might influence adaptation. At the same time, some theoretical work (e.g., rational-choice theory, the personality-environment fit theory, life-span theory), implies that the utility of a private choice (i.e., getting divorced) depends on a broader socio-economic environment. The socio-economic context creates opportunity structures, provides the institutional framework for action, and determines access to resources, and makes some resources more salient / relevant than others.

Hedonic adaptation profile is a result of interaction between personal resources and the broader context. The 3rd study tackled this issue by comparing the adaptation patterns in two countries that to a large extent differ by divorce settings – Germany and Russia. Given that almost all of the work on hedonic adaptation to critical life events has been done with the data coming from highly developed Western societies (e.g., SOEP from Germany, BHPS[22], HILDA[23]), it is especially valuable to complement the literature with the findings from a society where the socio-cultural context is very different to the one prevailing in the literature.

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[22] British Household Panel Survey
[23] The Household, Income and Labour Dynamics in Australia

The aim of the 3rd study was threefold. First, we aimed to compare the overall effect of divorce on SWB in Russia and Germany. Second, in both populations we identified groups of individuals who follow different adaptation trajectories. Finally, we explored the issue of resource constancy and identified, which resources play a role in the development of positive or negative outcomes of divorce in both samples.

II. Zooming in on the Timing of Life Events: Is Hedonic Adaptation Sensitive to the Temporal Distance from the Event?

This study analyzed the effect of major positive and negative life events (marriage, divorce, birth of child, widowhood, and unemployment) on life satisfaction. For the first time, this study estimated the effects of life events with a precision of 3 rather than 12 months. Specifically, two questions were addressed: (i) Does the precision of the temporal localization of the event (i.e., 3 or 12 months) affect the observed trajectories of life satisfaction, and (ii) is the precision of the temporal localization more important for negative life events? As expected, results showed that the precision of temporal localization allows a clearer view on hedonic adaptation, in particular following negative life events.

1 Introduction

Contemporary theorizing on the regulation of SWB attempts to build a comprehensive model linking three groups of factors: life circumstances (environment), personality, and life events. The question whether the effect of major critical life events is temporal or permanent has been the subject of intensive debate over recent decades. Although there is some empirical support for the chronic strain model (e.g., Lucas, 2007), which showed that crucial experiences (at least, some of them) have long-lasting consequences for levels of SWB, the literature in the area is still dominated by the hedonic treadmill theory (Brickman & Campbell, 1971), which claims that SWB eventually returns to its person-specific baseline. Eventual reversion to the pre-event level is conceptualized as hedonic adaptation to a given life experience.

To date, the question whether major life events in general have a permanent or temporary impact has gradually transformed into or has been complemented by another one: *which factors* shape the adaptation trajectory (e.g., Staudinger, 2000). It has been documented that both pre- and post-event dynamics of SWB vary across: a) individuals; for example, personality traits, such as extraversion and neuroticism, moderate the effect of life experience on SWB (Staudinger *et al.*, 1995; Diener, 2006; Greve & Staudinger, 2006; Headey, 2008); b) contexts: forewarning influences the speed of adaptation (Frederick & Loewenstein, 1999); c) time since the event: the adaptation to a partner's loss follows a curvilinear pattern: it goes faster immediately after the loss, and slows down over time (Burke *et al.*, 2007).

Compared to inter-individual and inter-contextual differences in habituation, however, the question of timing has received less attention. The existing literature mostly relies on large-scale survey data sets, which usually provide annual measurements of SWB. This design implies that the target event may have happened at any one of the 12 months between two subsequent measurements of SWB. As a consequence, participants may be at quite different points in their adaptation process when they are measured again according to the yearly assessment design. It seems that only recent events demonstrate a significant effect on SWB (Suh *et al.*, 1996): averaging scores of SWB across a year may, therefore, lead to an underestimation of the initial reaction and a distortion of the observed adaptation trajectory. The 12-month precision may indeed be efficient if the focus is on establishing the sheer fact that adaptation to a given experience takes place. Given such a focus, the potential underestimation of the immediate reaction may seem insignificant and subsequently be disregarded. The 12-month assessment strategy might be inadequate, however, if the focus is on gaining deeper insight into the process of adjustment and on obtaining precise estimates of SWB changes following the event under investigation, especially because the strongest effects

have been reported to occur in the immediate temporal vicinity of the event (Burke, 2007; Clark *et al.*, 2008).

This is where the current study wants to make a contribution. It profits from the availability of monthly records concerning important life events in the German Socio-Economic Panel data. Thus, we were able to use more precise data on the timing of life events. In particular, we used information on which *quarter* of the year the event had taken place rather than using the year of the event. as is common in the literature (e.g., Clark *et al.*, 2008; Lucas, 2005; Lucas, 2007; Zimmermann & Easterlin, 2006)[24]. Furthermore, we have implemented a formal test to compare results obtained from the quarterly data with those from the yearly data. Based on such 'higher temporal resolution' we hoped to test two major hypotheses: a) patterns of SWB adaptation assessed using a quarterly resolution differ from those assessed using a yearly resolution; and b) major life events differ with regard to their sensitivity to quarterly timing. Five major life events were considered: marriage, birth of child, unemployment, divorce, and widowhood.

1.1 Hedonic Adaptation

Hedonic adaptation may be defined as a reduction in the affective intensity of favorable and unfavorable circumstances across time (Frederick & Loewenstein, 1999). This process comprises an anticipatory and a reactive part, and it serves several important functions. Firstly, a persistently strong hedonic state (positive or negative) may have detrimental physiological consequences. Secondly, it may divert our resources away from other important domains. Therefore, hedonic adaptation is, in a sense, enhancing our perception: for example, in a highly aversive situation (e.g., death of a spouse),

[24] To our knowledge, only Frijters *et al.* (2010) apply quarterly timing of life events to large-scale panel data (HILDA); they do not focus, though, on the comparison of yearly and quarterly measurements.

people experience strong emotional reactions, and other changes taking place in their lives do not seem to be of any importance or may even go unnoticed. Due to hedonic adaptation, however, we continuously rescale our evaluation of a given situation, thereby regain the ability to acknowledge the importance of subtle changes (e.g., improvements in the financial situation), and become motivated again to improve our current situation (Frederick & Loewenstein, 1999). Finally, new events overrule past ones, because new events provide new information, which helps individuals in guiding their behavior and finally leads to more efficient emotional functioning (Suh *et al.*, 1996).

In the present study, we have used SWB—defined as judging life positively and feeling good (Diener *et al.*, 1997) — as a proxy measure of hedonic adaptation. We employed a one-item indicator of SWB, that is, overall life satisfaction. The widely accepted 'tripartite' model (Diener *et al.*, 1999) distinguishes three components of SWB – satisfaction, positive affect and negative affect (the latter two are treated as largely independent constructs). Life satisfaction represents the cognitive evaluation of one's life, reflecting the goodness of fit between personal aspirations and perceived reality (Grob *et al.*, 1996).

1.2 Hedonic Adaptation to Life Events: Theoretical Frameworks

The question whether the effect of crucial life events on subjective well-being is temporary or permanent has been addressed within numerous theoretical models: these include, among others, the hedonic treadmill model, the stress-adjustment model, and the protection model. A solid body of empirical evidence, collected within these frameworks with regard to various experiences, suggests that adaptation (i.e., SWB equilibrium being challenged by a certain experience, but eventually restoring) is a rather widespread pattern of SWB dynamics triggered by a crucial life event.

The hedonic treadmill model claims that even the most dramatic experiences, such as becoming disabled as a result of an accident or winning a large sum in a lottery, have much less of a long-lasting impact on subjective well-being than might be expected. In their classic study, Brickman *et al.* (1978) find that lottery winners derive less pleasure from everyday activities and are only insignificantly happier than the control group. Although the data on injured individuals provided less support for the adaptation model (accident victims were significantly unhappier after the injury than the control group, but were more positive about events in their past, thus shaping a peculiar 'positive anchor'), the authors nevertheless claimed that people's reactions even to dramatic events bear transitory character.

The stress-adjustment model (Amato, 2000), similarly argues that the effect of stressful events is assumed to be primarily temporary, although a minority may have more permanent consequences. Subjective well-being should reach its maximum / minimum immediately after a stressful event, and then gradually return to pre-event levels.

The protection model (Forste, 2004; Soons & Liefbroer, 2008) argues that a given social status has protective potential and that the transition in or out of the 'protective' status either enriches or depletes a person's resources: in other words, the family or labor market status is linked to the availability or lack of resources. For example, participation in the labor market fulfills important needs such as structure, social contact, engagement in activities serving collective purposes, social prestige, identity, and a regular activity (Jahoda, 1982); subsequently, becoming unemployed inhibits the fulfillment of these needs. The effect of an event might be temporary or permanent, depending on the ratio of the pre- and post-event amount of resources. Resource-rich persons will recover more quickly than resource-poor ones.

Even though both the hedonic treadmill model and the stress-adjustment model (the protection model as well, to a lesser extent) imply transitory effects of life experi-

ences, they emphasize different mechanisms of habituation. While the stress-adjustment model and the protection model focus on coping resources, the hedonic treadmill model views the change in aspiration levels subsequent to an event as one of the central mechanisms of adaptation[25] (Layard, 2005). All three frameworks, however, have so far been primarily concerned with confirming (or refuting) the sheer fact of adaptation to a given experience, and with factors, such as personal resources, which influence inter-individual differences in adaptation. Less attention is paid to the temporal distance between the event and SWB measurement, which is crucial for building a precise trajectory of adaptation.

1.3 The Dynamics of Hedonic Adaptation Depends on the Event

Despite a growing body of evidence in support of the transient effect of life events, complete adaptation does not appear to be an unbreakable rule. There is an ongoing discussion on whether or not marriage, divorce, widowhood, and unemployment lead to everlasting changes in SWB. There are arguments in favor of complete adaptation to *marriage* within two years after the event (Clark *et al.*, 2008; Lucas *et al.*, 2003). On the other hand, Zimmermann and Easterlin (2006) apply different models to the same dataset (GSOEP) and report that individuals who remain married for two or more years do not go back to the pre-marriage baseline but rather remain at a higher level. There is no complete adaptation to *unemployment* (Clark *et al.*, 2008; Lucas *et al.*, 2004) even after 4 years[26], or to *disabilities* (Lucas, 2007). *Divorce* is a controversial event for it has potential for both, positive and negative, outcomes. On the one hand, divorce leads to lower happiness (Amato, 2000; Erbes & Hedderson, 1984; Forste &

[25] E.g., after an increase in salary, people raise their material aspirations; thus, the gap between their aspirations and the actual state remains, preventing any lasting enjoyment of the higher income.
[26] Moreover, continuous exposure to unemployment may evoke sensitization - an increase of the initial reaction rather than adaptation (Frederick & Loewenstein 1999, Luhmann & Eid 2009).

Heaton, 2004; Gahler, 2006), health problems and higher mortality (Vallin & Nizard, 1979), poor self-concept and self-acceptance (Amato, 2000), lower standard of living, especially for women (Andress & Bröckel, 2007), and lower SWB (Lucas, 2005). At the same time, divorce leads to more autonomy, career[27] and personal growth (Amato, 2000): contrary to earlier findings (Lucas, 2005), recent studies seem to report full and rather rapid adaptation to divorce (Clark *et al.*, 2008).

Differences in findings are partly due to differences in analytical techniques[28]. However, findings also suggest that reaction patterns depend on the *type of event*; therefore, deeper insight into the nature and meanings of life experiences is needed.

Experiences which are subject to hedonic adaptation are also not homogenous in terms of anticipation length and the duration of the adjustment process. This may have consequences for how sensitive a given event is in terms of the precision with which the timing of the event is taken into consideration. In that sense, time is an important predictor of adjustment to *widowhood*, but not of adjustment to *divorce*, if 6-month intervals are used[29] (Farnsworth *et al.*, 1989). Depending on the event (marriage, divorce, birth of child, widowhood, layoff, or unemployment) and gender (Clark *et al.*, 2008), the anticipation period might comprise zero to four years[30].For some events, there is a rapid return to baseline satisfaction, while others (*marriage* and *unemployment*) have longer lasting effects. These findings suggest that yearly measurements may allow quite accurate approximation of the adaptation process for some events but not for others.

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[27] For women

[28] Given that the data in the cited sources were collected at different decades of the 20th century, one may also hypothesize that, incidentally, cohort effects may play a role.

[29] I.e. within two years following the loss of spouse, SBW increases significantly from one six-month period to another. This pattern does not apply to divorce. This study takes into account only two years after divorce / widowhood; it is plausible that time becomes a predictor if a longer time span is considered.

[30] More precisely, for women, anticipation of unemployment, childbirth and layoff lasts for about one year, whereas men anticipate divorce for three years, marriage and widowhood – for two years. In females, there are no lead effects in cases of marriage and childbirth, unemployment is anticipated for about one year, widowhood for three years and divorce for four years.

1.4 Event Characteristics that Influence the Speed of Adaptation

Little is known about which event characteristics might alter the speed and degree of habituation. In the following, we describe events features which have received attention in the literature: uncertainty, normativity, and valence.

Uncertainty. One of the important processes supporting affective habituation is the possibility to explain the event (Wilson & Gilbert, 2008). Finding meaning in the experience fosters recovery from marital dissolution or death of spouse (Bonnano *et al.*, 2002). Being *uncertain* of the final outcome (i.e., whether the event will happen or not, or what kind of consequences it will entail) makes it more difficult to find an appropriate explanation and, therefore, inhibits habituation to both negative and positive experiences (Wilson & Gilbert, 2008). *Forewarning*, on the contrary, substantially increases the degree of certainty and allows seeking an explanation in advance (Frederick & Loewenstein, 1999); therefore, hedonic adaptation can start even before the event takes place.

Normativity of the event as a factor which influences the adaptation process has two dimensions: normativity of the event within a life-course of a concrete individual, and frequency of this event in a given population. Both can influence the strength of initial reaction to the experience. Deviation from a person's typical events (both positive and negative) has greater impact on subjective well-being. In other words, if a person experiences a spell of positive events, he / she is less affected by one additional positive event than someone who does not experience so many positive events (Headey and Wearing, 1989; Oishi *et al.*, 2007). Perhaps, normativity is related to ease of finding an explanation as it might be more difficult to explain events that are unusual in any re-

spect[31]. Normativity of the event for the community (milieu, region) also appears to be a predictor of reaction strength. Research on unemployment has shown that higher regional rates of unemployment seem to be a protective factor which makes the unemployed feel better (Clark *et al.*, 2009). Although predictors of the initial reaction do not necessarily serve as predictors of either adaptation speed or the adaptation trajectory, it is plausible that more effort is required to explain an event that does not comply with the social norm, as well as to protect one's self esteem.

Valence of an event is another factor influencing habituation speed: people tend to adapt more quickly to positive events rather than negative ones, provided that the events are of more or less the same magnitude (Lyubomirsky, 2011; Suh *et al.*, 1996; Wilson & Gilbert, 2008). Moreover, people seem to never fully adapt to certain negative experiences, whereas hardly any research suggests that SWB is boosted after positive experiences are (ever)long-lasting. The "bad is stronger than good" phenomenon seems to be reflected in a number of cognitive and emotional effects, such as first impression, priming, monitoring and remembering negative feedback, etc. (see Lyubomirsky, 2011 for review).

Also a number of theoretical accounts can be called upon in order to argue for the importance of the valence of an event for the subsequent regulatory process. Prospect theory, for instance, argues that losses have a bigger impact on behavior, well-being and decision-making than gains (Kahneman & Tversky, 1984). The AREA model of hedonic adaptation (Wilson & Gilbert, 2008) suggests that habituation to experiences involves three processes – attending, reacting and explaining. Habituation to positive events goes faster, because people are less likely to attend to them, exhibit weaker

[31] The picture is, however, more complicated. Research on repeated life events reveals, in fact, different patterns of well-being dynamics. In case of repeated unemployment we observe sensitization rather than adaptation, whereas repeated marriages remain as good as the first one, and second divorces evokes weaker response than the first one (Luhmann & Eid, 2009). Apparently, individual normality intertwines with other factors.

emotional reactions, and find explanations much easier. Explanations provided for the stronger effects of negative experiences include evolutionary and cultural perspectives. Stronger reactions to negative experiences are functional (adaptive, important for survival), since positive events only inform individuals that everything is going well, whereas negative experiences signal potential threat (Lyubomirsky, 2011). According to the frequency model, positive events have weaker effects on well-being only in cultures high in global well-being, due to the reduced effect of a single positive event among many other positive events (Oishi *et al.*, 2007). This should be very different, however, in a culture with a low level of global well-being.

Although it is well documented that adaptation to negative events goes at a slower pace, there are reasons to believe that SWB dynamics follow a curvilinear trajectory, adjustment happening more rapidly at the initial stage of experience and then slowing down (Carnelley *et al.*, 2006). The curvilinear pattern is due to a differential activation of regulatory processes, depending on the gap between the respective current state and the equilibrium state. Therefore, regulatory processes should be stronger at first, and subsequently slow down. Given that the initial reaction to negative experiences is stronger than to positive ones, it is plausible that the slope of the adaptation trajectory also is steeper in case of negative events.

1.5 The Current Study

The majority of findings described in the previous sections rely on the analysis of aggregated data (i.e., yearly measures of SWB) and provide only an approximation of the level of life satisfaction around the time of an event. This is because usually it is not taken into account (other than within the last 12 months) how much time has passed between the event and the SWB assessment. Therefore, we cannot determine how strong the reaction at the time of the event may have been: some individuals may have

experienced the event 11 or 12 months ago and may have already returned to earlier levels of SWB, whereas others experienced the event just 2 or 3 months ago and are still in the midst of the first very dynamic phase of the adaptation process. Averaging across such individuals as is common in the analysis of survey panel data thus puts apples and oranges in one basket. As a consequence our insight into the effects of certain life events may be hampered.

Of course, the yearly-measurement approach assumes that the overall insight into the process of adaptation is not severely compromised by the fact that events may have happened either 1 or 11 months ago. It is known, however, that the time passed since the event is one of the main predictors of the level of adaptation measured at a given point in time. The strength of this effect may vary, depending on the features of a particular event. In the current study we focused on v*alence*, taking into account two considerations. Firstly, as discussed above, a solid body of literature suggests that valence is an important predictor of adaptation length and of the strength of the initial reaction, i.e., negative events lead to greater turbulence in well-being around the time of the event, and adaptation to negative events takes longer. Secondly, we assumed that from an outsider's perspective, valence is the easiest characteristic to determine, compared to, for example, degree of predictability, or normality. Therefore, validity of evaluating an event as negative or positive is higher compared to assessing it as predictable / unpredictable. Thus, the present study has tested whether in the case of negative events a temporally more fine-grained measurement indeed results in demonstrating a different adaptation trajectory.

This study addressed two hypotheses:

Hypothesis I: The precision of temporal localization of an event (i.e., yearly or quarterly timing) influences the observed adaptation trajectories.

Hypothesis II: The valence of an event influences the importance of the temporal resolution of the SWB assessment in relation to the event; precise timing (i.e., quarterly measurements) is more important for negative events (divorce, widowhood, unemployment).

2 Method

2.1 Sample and Design

To investigate the hypotheses formulated above, the present study uses data from the twenty-four waves of the West German sub-sample of the GSOEP, 1984-2007 (Haisken-DeNew & Frick, 2003). 24 waves of the GSOEP allow following an individual for up to 23 years after an event. The GSOEP is a longitudinal survey of persons and households. It started in the FRG in 1984. In 1990 the survey was expanded to the former GDR. GSOEP samples were composed by means of the multi-stage random selection method. All samples have been regionally clustered. The GSOEP questionnaires cover a range of essential domains, such as education and qualification, labor market and occupational events, income, social security, household composition, health, housing conditions, family dynamics, values and attitudes, and the subjective evaluation of life domains and life in general. The interview design aims to obtain personal interviews with all members of a household who have reached the age of 16. One member of the family provides information about the household and the children in the household. Family members who have left their household are followed up at their new place of residence. New members of a household join the survey.

The key advantage of this data set for our questions is that we were able to identify the events in question on a monthly basis rather than on the yearly basis used by previous studies. GSOEP has been asking individuals to detail the month in which a life event occurred, which allows us to estimate anticipation and adaptation effects with

regard to the month in which it occurred. In the present study we used information about the actual quarter of the year when the event had taken place rather than the year of the event as is common in the literature. Table 1 shows the number of observations per event. Table 2 presents the characteristics of the GSOEP (Western German subsample), 1984 – 2007.

Table 1. Number of Observations per Event

Adaptation Phase	Marriage	Birth of child	Divorce	Widowhood	Unemployment
Anticipation					
10-12 months before	202	254	118	119	205
7-9 months before	290	249	104	160	148
4-6 months before	450	265	100	140	138
0-3 months before	475	283	97	156	46
Reaction					
0-3 months after	291	315	146	154	153
4-6 months after	422	288	121	166	93
7-9 months after	574	253	105	149	65
10-12 months after	406	238	117	128	51

Table 2. Characteristics of the Selected Subsample of the GSOEP (1984-2007)

Characteristic	Mean value (standard deviation in parentheses) or percentage
Number of individuals	9,679
Number of person-year observations	120,747
Mean satisfaction with life	7.08 (1.84)
Mean length of education	11.4 (2.42)
Unemployed	5.10 %, or 6,163 persons-year observations
Male	47.5%
Mean age	48.7 (min. 17, max. 99)
Average annual household income	28,623 (18,457)
Number of children in the household	0.53 (0.89)
Employed	49.03%, or 59,207 persons-year observations

Note. Mean values and percentages are calculated across all person-year observations

2.2 Measures

Life satisfaction. As a proxy measure of the reaction to an event, we used one principal dependent variable – life satisfaction. It was measured with the following item: "How satisfied are you with your life, all things considered?" Responses are distributed on an 11-point scale (0-10), where 0 corresponds to 'Completely dissatisfied" and 10

mean "Completely satisfied". Table 1 in the Appendix shows the distribution of this item for the West German GSOEP sub-sample used in our subsequent empirical analysis.

Life events. The following events were assessed using an activity calendar: positive – marriage, birth of child; negative – divorce, widowhood, unemployment. The activity calendar used in GSOEP encompasses a set of questions referring to certain life events which might have taken place during the year since the last assessment (and during the previous year[32]). Moreover, respondents were asked to indicate the exact month of the event. As it might be the case that people react differently to the first event as compared to repeated events (e.g., first marriage, child, unemployment, etc.), only first events were taken into account. Effects of future unemployment are only estimated for those who are currently employed.

Time since event. Two phenomena, anticipation and adaptation, were modeled separately. In order to build homogenous subsamples, we broke the first year after an event into four periods of three months each. We estimated the effect of the event on life satisfaction separately for four groups: individuals who experienced the event within 0-3 months (within 4-6, 7-9, and 10-12 months) prior to the interview. The same strategy was used to estimate the effect of an upcoming event on life satisfaction. For this, we also created four groups: individuals who will have experienced an event within 3 months after the interview, and within 4-6, 7-9, and 10-12 months, respectively.

Control variables. The list of control variables included marital and labor force status, years of education, number of children, partner's employment status, income (annual household income per capita), age, gender, health status, and year of survey. *Number of children* is a continuous variable which indicates total number of children under the age of 18 in the household. *Marital status* is a five-categories variable: mar-

[32] To analyze the anticipatory stage of the adaptation process

ried, living together with my spouse, married, living (permanently) separated from my spouse, single, divorce, widowed. *Number of years of education* was constructed so that it indicates the number of completed years in education at the time of survey. Income was measured by the annual household post-government income (a generated variable) divided by the number of household members. *Household post-government income* represents the total family income (including revenues from labor earnings, asset flows, retirement and social security pensions, private and public transfers), after taxes. In order to identify the *partner's employment status*, a generated variable 'partner person number' was used; it allowed linking an individual to his/her respective partner and deriving the respective information about the partner. As regards *health status*, the argument has been made that health (just like income) is not entirely an exogenous variable, therefore it should be excluded from the list of right-hand side variables (Blanchflower & Oswald, 2004). At the same time, health is an important correlate of SWB. Taking both arguments into account, we rejected self-reported health, often used as a control in SWB studies, and chose an objective indicator instead – the annual number of visits to doctor. Finally, *labor status* was identified as either employed (full-time or part-time), or unemployed (identified as being not employed and officially registered as unemployed).

The operationalization of the 'unemployment status' requires additional clarification. After the first wave, 'unemployment' is indicated by the option 'not employed,' which may have multiple meanings. Therefore, we used an item which indicated exactly how the job was terminated (the question had eight answer options: because my place of work or office has closed, resignation, dismissal, mutual agreement, a temporary job or apprenticeship had been completed, reached retirement age, suspension, purpose of my self-employment/business). Our definition of unemployment only comprises persons who reported that they "were dismissed" or "their contract was terminated by employer".

Analyses were run for each event separately. In each model (except for the analysis of having a child), some categories of control variables were omitted in order to avoid collinearity. For example, in the analysis of marriage, variable 'being married' was excluded in order not to extract the variance from the transition from not being married to being married, in the analysis of divorce, variable 'being divorced' was excluded, and so on.

2.3 Analytic Strategy

Our goal was to compare two models: in the first model the reaction period comprised one year after an event, in the second one, the reaction period was limited to three months. Status passages were picked up by using dummies; four dummies identify the quarter when an event had occurred; they indicate whether an individual experienced an event within 0-3 (4-6, 7-9, 10-12) months *preceding* the interview at t_0[33]. The same approach was applied to anticipation. Four dummies were created in order to identify whether an event occurred within 0-3 (4-6, 7-9, 10-12) months *after* the interview at t_{-1} [34].

Furthermore, we ran pair-wise comparisons of regression slopes – of that obtained for individuals who experienced the event at any point within twelve months prior / after the interview and the one estimated for respondents who had undergone the transition within one of four quarters. If there were no significant difference in reaction to an event between groups ($\beta^1 = \beta^j$; j = 1, 2, 3, 4), we argued that the 'aggregated' approach provides accurate estimation of an event's effect. If, however, there was a

[33] The first interview after the event took place.

[34] Since the time span between two interviews is sometimes less than 12 months, it happens than an individual appears in two groups, i.e. once in the group of respondents who will experience an event in 10-12 months, and again in the group of those who will experience it within three months after the interview. The numbers of such cases is small: 17 for marriage, 5 for divorce, 13 for unemployment, 15 for childbirth, and 10 for widowhood.

significant difference between groups, we claimed that the 'aggregated' strategy overlooks the dynamics of subjective well-being and leads to underestimation of an event's effect; therefore, more precision in the temporal localization of the event is necessary to derive the adequate anticipation / adaptation trajectory. "Quarterly" and "yearly" analyses were run separately.

Analysis of the panel data allows overcoming certain shortcomings of cross-sectional studies, in particular, unobserved heterogeneity. Unobserved characteristics may bias the results, by being correlated with both the independent and the dependent variables. For example, some personality traits may influence both the probability of getting married and life satisfaction. Also, self-selection operates along events' effects, which means that people with initially higher or lower levels of SWB (which could, in turn, result from being characterized by a certain personality type) are likely to have a particular experience, for example, get married or divorced (Headey & Wearing,1989; Forste, 2004; Graham *et al.*, 2004; Lucas, 2005; Stutzer & Frey, 2006). In panel data analysis, there are several ways to deal with unobserved heterogeneity. In this study two approaches were considered: the fixed effects model and the Mundlak model.

Modelling with fixed effects allows controlling for unobserved heterogeneity, i.e., time-invariant characteristics, even if we do not measure them. The main advantage of the fixed effects model is that it relies on *within-person variation* and controls for time-invariant characteristics (e.g., personality, gender, etc.). This means, however, that such a model is only capable of estimating the effect of time-*variant* variables.

An approach to capture the unobserved heterogeneity and estimate the effect of time-*invariant* variables and, at the same time to control for possible correlations between unobserved heterogeneity and independent variables, was offered by Y. Mundlak (1978). The Mundlak model is based on the assumption that unobserved heterogeneity consists of two parts. The first part is uncorrelated with the observed variables, whereas

the second part, supposedly, varies linearly and constantly over time with individual means; for instance, the correlation between personality and life satisfaction, as well as the probability of getting married remains linear and constant over time. Implementation of the Mundlak specification, therefore, augments the random-effects model with the individual means for time-variant independent variables. Implementation of individual means is assumed to partial out possible correlation between independent variables and unobserved heterogeneity (e.g., personality traits and probability of getting married) out of the effect of independent variables (e.g., getting married) on life satisfaction.

Equations 1, 2 and 3 illustrate the fixed effects model and the Mundlak model, respectively.

$$y_{it} - \bar{y}_i = \beta(x_{iy} - \bar{x}_i) + \varepsilon_{it} - \bar{\varepsilon}_i \quad (1),$$

$$y_{it} = \alpha_i + x'_{it}\beta + \varepsilon_{it} \quad (2),$$

$$\alpha_i = \alpha\bar{x}_i + \omega_i \quad (3),$$

where y_{it} is the independent variable for individual i (i=1, ...,n) at time period t (t = 1, ...t), α_i is an individual specific and time-invariant random component, $x`_{it}$ is a vector of explanatory variables, $\varepsilon_{it}$ is a normally distributed error term. In the Mundlak model, $\alpha_i$ is a function of $\bar{x}_i$, the within-individual means over t of the $x`_{it}$ variables, and ω_i, the normally distributed random effect.

As the Mundlak model is more efficient because it allows taking into account both time-variant *and* time-invariant characteristics, we used it as the principal strategy for our analysis. The Hausman test was performed in order to compare the Mundlak model and the fixed effects model. In our case the Hausman test was insignificant (for example, in the analysis of marriage $\chi^2 = 18.36$, P =0.39), which proved that there are no systematic differences between the two models. Therefore only the results of the

Mundlak model (as the more efficient one) are discussed. The results of the fixed effects model are reported as a test of the robustness of results (a similar strategy was employed by Andersen, 2008).

The next question that arose was whether regression slopes were the same across the two analytic approaches – the one which included individuals who experienced an event within one year ('aggregated' sample) and the one which limited event timing to a quarter of a year. The null hypothesis tested the claim that the slopes were the same:

H^0: $\beta^1 = \beta^j$

Where β^1 denotes the slope of regression line obtained with yearly measurements, whereas β^j denotes the slope of j^{th} subgroup (j = 1, 2, 3, 4). In order to formally compare estimates obtained with yearly and quarterly measurements, the whole sample was randomly divided into two parts in the proportion of 1/3 and 2/3. This strategy allowed running two analyses on two independent samples, and, consequently, comparing the coefficients. The subsample, which was further divided into four subgroups according to the temporal distance from the event, was made twice as big as the other one in order to avoid too small cell sizes[35].

The comparison of subgroups is done using the formula suggested by Cohen (1983):

$$Z_{\alpha/2} \leq \frac{b_1 - b_2}{\sqrt{SE_1^{\,2} + SE_2^{\,2}}} \leq Z_{1-\alpha/2} \qquad (4),$$

where SE_1 and SE_2 denote standard errors of b_1 and b_2, respectively, and $Z_{1-\alpha/2} = 1.96$ for $\alpha = .05$. The formula (4) defines the acceptable region for Z-scores.

[35] If, for example, the sample were split into two equal halves, the problem of too small cell sized would have been encountered. In fact, even with 2/3 of the whole sample we encounter this problem in two subgroups in the case of unemployment.

The same formula was used to additionally test whether regression slopes were the same across four subgroups ($H^0 = \beta^1 = \beta^2 = \beta^3 = \beta^4$); β denotes the slope of j^{th} subgroup, j = 1, 2, 3, 4). This comparison revealed which subgroups differ in the level of life satisfaction, thus, it allowed identifying significant changes in SWB dynamics throughout two years surrounding the event.

3 Results

Results by and large confirmed our expectations. Not always is it necessary to take a more precise look at the temporal localization of the critical life event in order to get a good view on the adaptation process but sometimes indeed it is. As expected, it is the negative events that disclose their dynamics only under more refined scrutiny. Tables 3 and 4 show the regression coefficients obtained with the Mundlak model[36]. Figure 1 depicts the effect of five life events on satisfaction with life across a period of two years. Estimates from the fixed effects model are presented in the Appendix (Table 2). Visual comparisons of the coefficients indicate that the differences between the two models are small. As mentioned before, the formal Hausman test confirmed similarity between the two models.

The main research questions of the study were, first, whether the yearly temporal resolution may distort SWB trajectories around central life events and, second, whether the higher temporal resolution (i.e., quarterly) is more important for negative events. Table 5 shows the Z-scores obtained from comparing yearly and quarterly measurements. Results show that indeed it is only important for negative events to use the quarterly resolution.

[36] Tables 3 and 4 present estimates obtained *on the whole sample*. The coefficients obtained with split sample provide virtually the same results.

Table 3. Reactive Adaptation to Life Events (Comparing Quarterly and Yearly Precision in Temporal Localization). The Mundlak Model

Precision of Temporal Localization	Marriage	Birth of child	Divorce	Widowhood	Unemployment
3-Months					
1-3 months after the event	.424*** (.10)	.392*** (.08)	-.332** (.14)	-1.829*** (.13)	-.940*** (.14)
4-6 months after the event	.472*** (.08)	.198*** (.08)	-.306** (.15)	-1.227*** (.13)	-.333** (.17)
7-9 months after the event	.397*** (.07)	.164** (.08)	.157 (.15)	-.721*** (.14)	-.621*** (.20)
10-12 months after the event	.338*** (.08)	.245*** (.09)	.248* (.16)	-.842*** (.15)	-.386** (.22)
12 Months					
Within last 12 Months	.366*** (.05)	.183*** (.07)	-.088 (.08)	-1.214*** (.072)	-.615*** (.08)
2 years after the event	.218*** (.05)	-.139** (.06)	.099 (.09)	-.363*** (.07)	-.283** (.14)
3 years after the event	.075 (.05)	-.189** (.07)	.110* (.10)	-.209* (.08)	.192 (.17)
4 years after the event	.165* (05)	-.198** (.07)	.143 (.11)	.006 (.08)	.017 (.21)
5 years after the event	.088 (.05)	-.181* (.05)	.314*** (.12)	.052 (.09)	.282 (.23)
Controls					
Employment status					
1. Employed[a]	---	---	---	---	---
2. Unemployed	-.389***	-.379***	.387***	-.394***	---
Marital status					
1. Never married[a]	---	---	---	---	---
2. Cohabiting	-.263***	-.143***	-.202***	-.158***	-.176***
3. Married	---	.179***	.163***	.223***	.197***
4. Divorced	.015	.124***	---	.173***	.155***
5. Widowed	-.375***	-.205***	-.227***	---	-.197***
Partner's employment status					
1. Employed[a]	---	---	---	---	---
2. Unemployed	-0.52**	-.062***	-.043**	-.052**	-.068***
Age	-.050***	-.048***	-.049***	-.050***	-.051***
Years of education	.010***	.012***	.009**	.009***	.007*
Nr. of children	-.017*	-.039***	-.039***	-.042***	-.045***
Log household net income	.005***	.005***	.005***	.005***	.005***
Health status	-.008***	-.008***	-.008***	-.080***	-.008***
Male	-.059**	-.054*	-0.042	-.06**	-.054*
Wave dummies	yes	yes	yes	yes	yes
Constant	6.464*** (.09)	6.799*** (.09)	6.817*** (.09)	6.839*** (.09)	6.844*** (.09)
R^2 (within, between, overall)	.04/.09/.09	.04/.09/.09	.04/.08/.08	.04/.08/.09	.04/.08/.08
Wald chi^2	4955.53***	4477.54***	4860.16***	5248.30***	4497.56***
Rho	.433	.429	.435	.435	.441

Note. ***significant at 0.01 **significant at 0.05 *significant at 0.1. [a] Omitted categories. Standard errors in parentheses. Estimates of the control variables refer to the analysis of the quarterly data; estimates obtained with the yearly measurements are virtually the same. The constant term refers to the 'baseline', i.e., the level of life satisfaction as if an event had no effect at all.

Table 4. Anticipatory Adaptation to Life Events (Comparing Quarterly and Yearly Precision in Temporal Localization). The Mundlak Model

Precision of Temporal Localization	Marriage	Birth of child	Divorce	Widowhood	Unemployment
3 months					
1-3 months before the event	.414*** (.10)	.413*** (.09)	-.279** (.17)	-.743*** (.15)	-.345*** (.15)
4-6 months before the event	.212** (.09)	.283*** (.10)	-.127 (.17)	-.407*** (.15)	-.301*** (.14)
7-9 months before the event	.248** (.11)	.244** (.10)	-.587*** (.15)	-.314** (.13)	-.294** (.14)
10-12 months before the event	.277** (.13)	.047 (.11)	-.384*** (.14)	-.571*** (.15)	-.133 (.24)
12 months					
12 months before the event	.270*** (.06)	.251** (.07)	-.398*** (.07)	-.477*** (.08)	-.289*** (.11)
2 years before the event	.129** (.06)	.005 (.07)	-.467*** (.07)	-.259*** (.08)	-.103 (.11)
3 years before the event	.087 (.06)	.005 (.08)	-.300*** (.07)	-.114 (.08)	-.056 (.13)
4 years before the event	.103 (.06)	.006 (.07)	-.268*** (.07)	-.104 (.08)	-.042 (.13)
Controls					
Employment status:					
1. Employed[a]	---	---	---	---	---
2. Unemployed	-.348***	-.381***	-.380***	-.380***	-.344***
Marital status					
1. Never married[a]	---	---	---	---	---
2. Cohabiting	-.069	-.103***	-.144***	-.163***	-.151***
3. Married	.139**	.236***	.203***	.198***	.178***
4. Divorced	.351***	.164***	.161***	.149***	.243***
5. Widowed	-.159**	-.156***	-.178***	-.275***	-.193***
Partner's employment status:					
1. Employed[a]	---	---	---	---	---
2. Unemployed	-0.42**	-.076***	-.041**	-.062**	-.064***
Age	-.044***	-.049***	-.051***	-.050***	-.050***
Years of education	.002	.009**	.010***	.006	.009*
Nr. of children	-.007	-.046***	-.037***	-.037***	-.045***
Log household net income	.005***	.005***	.005***	.005***	.005***
Health status	-.008***	-.008***	-.008***	-.008***	-.007***
Male	-.050	-.041	-.033	-.057**	-.034
Wave dummies	yes	yes	yes	yes	yes
Constant	7.172*** (.11)	7.151*** (.11)	7.175*** (.10)	6.855*** (.10)	7.175*** (.11)
R^2 (within, between, overall)	.03/.09/.09	.04/.10/.09	.04/.08/.08	04/.10/.08	.04/.07/.07
Wald chi^2	2795.75***	3993.47***	4857.64***	4197.03***	3259.94
Rho	.447	.425	.440	.460	.451

Note. ***significant at 0.01 **significant at 0.05 *significant at 0.1. [a] Omitted categories. Standard errors in parentheses. Estimates of the control variables refer to the analysis of the quarterly data; estimates obtained with the yearly measurements are virtually the same. The constant term refers to the 'baseline', i.e., the level of life satisfaction as if an event had no effect at all.

Table 5. Comparing the Two Approaches: Z-scores (Significance of Differences between Regression Coefficients of the Quarterly and the Yearly Models)

	Marriage	Birth of child	Divorce	Widowhood	Unemployment
Anticipation					
1-3 months before	-0.8	-1.2	0.7	1.7	0.5
4-6 months before	0.6	-0.2	0.4	0.9	0.07
7-9 months before	0.4	0.8	2.3***	-0.4	0.3
10-12 months before	0.01	0.6	1.1	1.2	0.4
Reaction					
1-3 months after	-0.35	-1.4	2.85***	2.9***	1.16
4-6 months after	1.39	0.5	1.63	1.2	1.74*
7-9 months after	0.55	0.8	-0.94	2.4***	0.2
10-12 months after	0.39	0.6	0.12	1.93**	0.61

Note. ***significant at 0.01 **significant at 0.05 *significant at 0.1.

For positive events, no information is lost when aggregating on a yearly basis. As expected, the trajectories of life satisfaction around marriage and birth of child are not sensitive to the change in temporal resolution – at least, not for the intervals chosen for this study, and, at least, not within one year following / preceding the event. All Z-scores, reflecting the pairwise comparison of quarterly and yearly reactions, turned out insignificant. In the case of having a child, there is a slight reversion of SWB to the baseline: almost none of the Z-scores were significant, except for the one relating to the difference between the initial reaction (by initial reaction we mean the level of SWB within the first three months after the event) and 7-9 months (Z = 2.11**[37]).

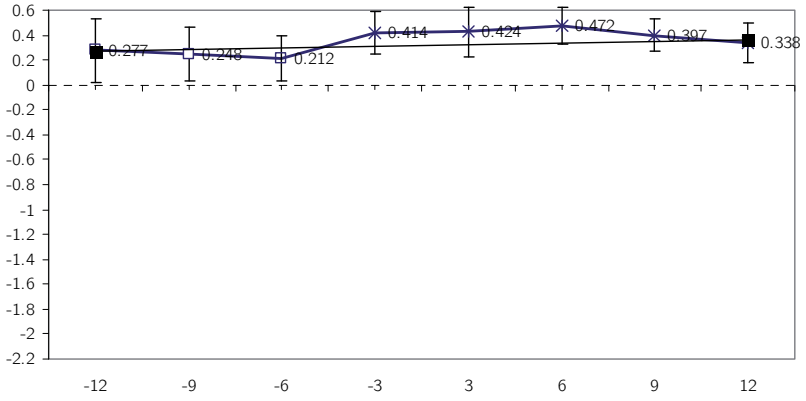
A different picture is revealed for the negative events divorce, widowhood, and unemployment. Using the temporal resolution of a year clearly underestimates the initial

[37] ** The Z-score is significant at 95%.

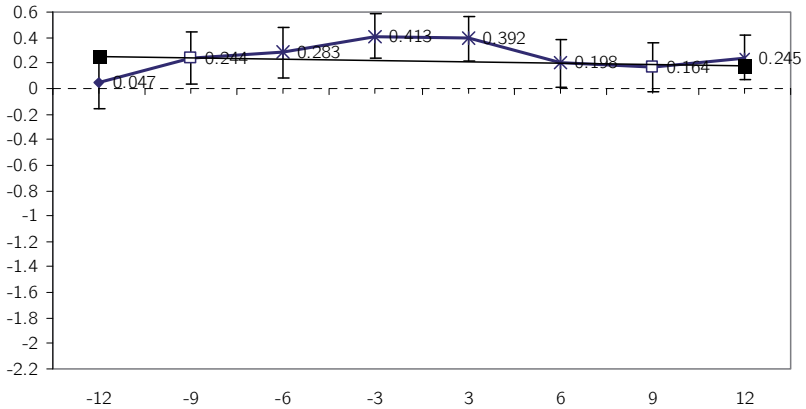
impact of these events on life satisfaction. In the case of widowhood, we observe a strong negative initial reaction, which is preceded and followed by rapid changes in life satisfaction. The dynamics of SWB before and after losing a partner is the most volatile among all the events under investigation. Comparison of yearly and quarterly models shows that only the 2nd quarter (i.e., 3-6 months after the loss) does not differ from the estimates obtained with the yearly resolution. The initial reaction is much stronger when estimated with the quarterly approach (Z = 2.9***), whereas during the 3rd and the 4th quarters following the loss respondents already report higher level of life satisfaction than compared to what can be assumed with the yearly measurements (Z = 2.4*** and Z = 1.93**, respectively). Pairwise comparison of differences between quarterly estimates provides additional information. The initial reaction differs substantially from the level of life satisfaction right before the event (Z = 5.4**), as well as from the second, third and fourth quarters after partner's death (Z = 3.2**, 5.5**, 4.9**, respectively). The second quarter after the event is different from two next ones (Z = 2.5** and Z = 1.95*, respectively). Apparently, six months is an important threshold in the SWB dynamics triggered by widowhood, since the two last quarters are not different from each other.

In the case of divorce the initial reaction is also underrated when the yearly resolution is applied (Z = 2.85***). Pairwise comparison of the subgroups reveals a clear threshold around six months after the divorce. At that point, life satisfaction differs significantly from the initial reaction: Z = 2.4** (when compared to 7-9 months) and Z = 2.9** (when compared to 10-12 months). The initial reaction does not differ from that of the second quarter, and, again, the second quarter differs from two subsequent ones (Z = 2.3** when compared to the 3rd quarter; Z = 2.8** when compared to the 4th quarter). Importantly, there are no differences between the quarter immediately preceding marital dissolution and the initial reaction.

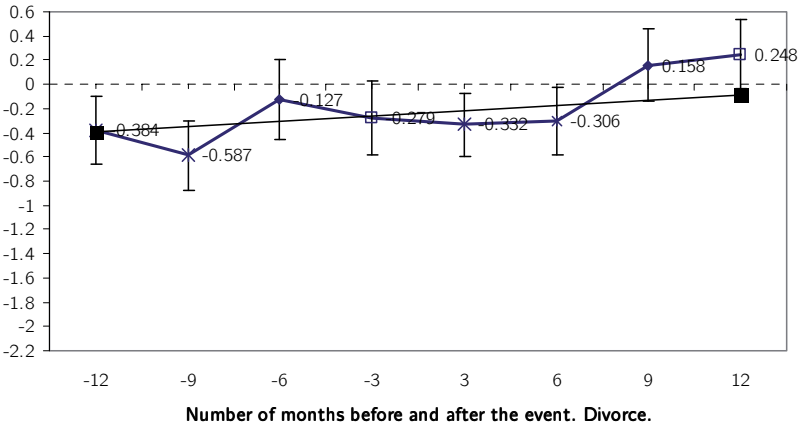
The SWB dynamics after becoming unemployed is also rather intense. There seems to be a threshold after the first three months (Z=2.76**), as the three other quarters (2^{nd} – 4^{th}) do not differ from each other. Quarterly estimates for unemployment should be interpreted with caution, however, because of highly unequal cell sizes. Frequencies of unemployment are distributed unevenly across the year because of seasonal variations. Note that SOEP interviews are mostly conducted during March and May. As a result, the group representing the last quarter (10-12 months after losing a job) has a rather small number of respondents. Nevertheless, unemployment remains a negative experience throughout the first year.

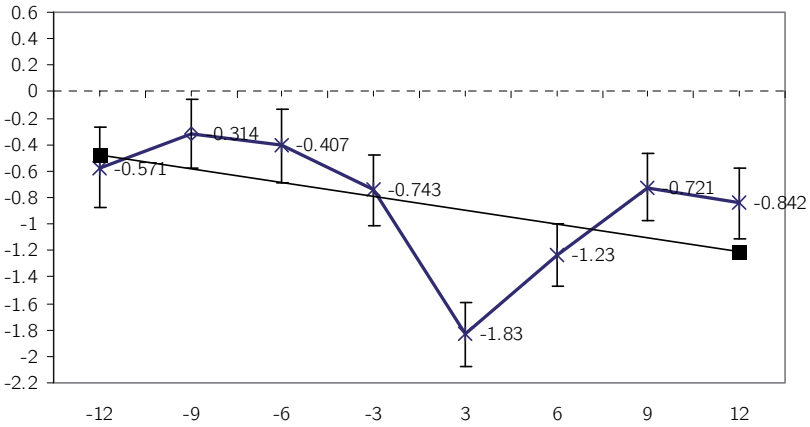


Number of months before and after the event. Marriage.



Number of months before and after the event. Birth of child.





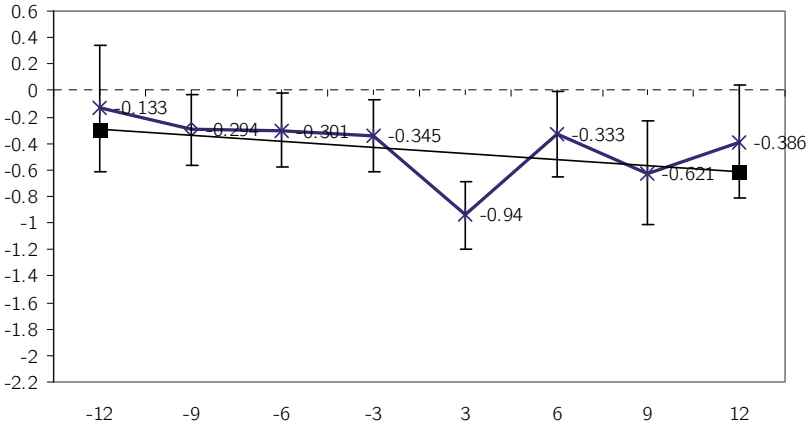


Figure 2. Effect of Life Events on Life Satisfaction

The thick line depicts the model with quarterly precision, the thin line the one with yearly timing. Unstandardized regression coefficients are shown on the y-axis. The dashed horizontal line reflects the baseline well-being, and might be interpreted as the level of satisfaction if an event had no effect at all. Vertical bars depict confidence intervals Significant differences from baseline levels: × significant at 1%, □ significant at 5%, ◊ significant at 10%.

4 Discussion

The purpose of this study was first to test whether the precision with which life events were temporally localized made a difference in terms of the observed SWB trajectories of adaptation. Secondly, the hypothesis was tested that the temporal resolution played an important role for negative but not for positive life events. The results by and large confirmed the hypotheses of the study.

Indeed, two clusters of events were distinguished with regard to the SWB volatility within the first year after the event. The first group comprises two positive events, marriage and birth of child. The second one contains of three negative experiences – divorce, widowhood, and unemployment. For negative events, such as widowhood, divorce, or unemployment, the yearly resolution distorts the observed SWB trajectory and leads to an underestimation of the effect. In contrast, the yearly resolution yields accurate results on the adaptive process for positive experiences, such as marriage and birth of child.

The findings are in line with the protection model, which links SWB dynamics with protective potential of certain statuses (i.e., being married, being employed) and available resources. Loss of protective status deprives an individual from important well-being sources, thereby producing strong reaction. Negative experiences, such as divorce[38], unemployment and widowhood severely deplete personal resources; the gap between the equilibrium state of SWB and the current state is especially big at the time of the event. Thus, these events require more intensive coping efforts in order to reestablish SWB equilibrium. Differences in initial reaction to positive and negative events could be also interpreted from the point of prospect theory that implies bigger impact of losses than of gains on behavior, well-being and decision-making (Kahneman & Tver-

[38] Even though divorce might be the exit from an unhappy marriage, its short-term consequences, as well as the period of anticipation, are associated with lower life satisfaction.

sky 1984). In the following, negative and positive events are discussed in detail and in turn.

For divorce, widowhood and unemployment the initial SWB reaction was found to be about twice as strong as might have been judged on the basis of the yearly resolution. Only in the case of widowhood, however, we also observed an overestimation of reaction during the second half of the year following the event. The yearly estimates, which average across the whole year, conceal these dynamics.

The obtained trajectory for divorce complies with existing findings; it is reported, for example, that individuals experience the greatest level of stress prior to making the decision to separate, and much lower stress following the final separation (Kitson & Morgan, 1990). Due to these findings, divorce is sometimes interpreted as a positive solution for a marriage of poor quality. This is a valid conclusion, as life satisfaction not only reverts to the baseline, but the effect turns to be positive even at the end of the very first year after the divorce. However, the eventual positive effect is not immediate: the first six months after the divorce are no better than (presumably) the time between the actual decision to separate and the divorce itself. All in all, SWB does not change much within one year time span, which encompasses six months before and six months after formal divorce[39]. Thus, applying the yearly temporal resolution to divorce leads us to overlook the significant dip in life satisfaction around the event and therefore increases the risk of the incorrect conclusion that divorce has, on average, no negative effects on SWB.

Patterns of SWB dynamics differ among negative events, too. In the case of widowhood the trajectory is more volatile than in cases of divorce and unemployment (i.e.,

[39] This brings us to the question whether events as discrete points are good markers of a critical loss or gain: if an event as such is a critical marker of change in SWB, how wide are the time brackets that limit the initial reaction?

in case of widowhood all quarters differ from each other, except for the two last ones). Several explanations for these differences can be offered. First, it is plausible that loss of partner produces a more uniform mourning reaction than marital dissolution[40]. In the latter case inter-individual differences are larger because divorce can be voluntary or involuntary; thus, some individuals can experience a relief rather than grief. With our methodology, however, we conceal inter-individual differences by averaging across the whole sample; it might be the case that high variability in short-term reaction to divorce results in less volatile averaged trajectory. Second, besides valence, other characteristics of events, such as predictability, can moderate the SWB dynamics. Some events can be foreseen better than others. Even though people might anticipate all negative events in question and studies provide empirical support for that (e.g., Clark *et al.*, 2008), there is more certainty with regard to the exact timing of divorce (especially since in this study we focus on formal divorce) rather than of unemployment and widowhood.[41] As discussed above, uncertainty hardly allows for anticipatory coping. We argue that the more an event is likely to be anticipated, the less it appears to be a marker of well-being dynamics; in other words, the reaction at the time of experience in the case of highly predictable event should not differ from the reaction averaged across much longer time span (e.g., one year). On the other hand, events that are harder to anticipate shatter well-being exactly at the time of the experience, and the coping efforts are condensed rather than distributed across a longer time span. In other words, anticipatory coping allows smoothening the transition, since it minimizes the degree of affective intensity experienced at the point of experience.

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[40] Even though, improvement in SWB can also be observed immediately following death of the partner; usually, such trajectory is characteristic for cases of long-term care.

[41] Although there are highly predictable cases of caring for a sick partner, as mentioned above, uncertainty regarding the exact timing of the loss still persists.

Positive events elicit less volatility in SWB dynamics. As these experiences are not resources-depleting, but are rather resource-enriching (especially, marriage), they do not signal any potential threat to optimal functioning or survival via a strong initial reaction. It is noteworthy, however, that birth of child, albeit initially positive, in the long run affects life satisfaction negatively, perhaps, because it is a resource-demanding event, at least, in the first few years.

It is also plausible that other characteristics of the event, such as predictability and compliance with social norms, contribute, alongside positive valence, to shaping of a gently sloping SWB trajectory. Both marriage and birth of child are highly socially approved, normative events, which are easy to make sense of. Compliance of an event or action with a social norm supposedly makes explanation easier, thus, according to the AREA model (Wilson & Gilbert, 2008), normative events should produce a 'smoother' reaction. Both events are highly predictable as well, which means that the coping efforts are distributed across a longer time span.

Implications for Future Research

One of the crucial questions in adaptation research is what are the predictors of adaptation trajectory? Identification of events on the quarterly basis may contribute to the literature by providing a more precise picture of the SWB dynamics. Firstly, the trajectory, which is based on averaging across a one year timespan might conceal multiple patterns. Thus, if the initial reaction to an event is underestimated due to crude timing, certain patterns of reaction may be overlooked. Secondly, different resources may operate on different stages of adaptation; e.g. it may be that self-regulation skills are very important immediately after losing a partner, whereas after ten months sufficient financial resources matter more. Certain events, such as divorce and widowhood, are characterized by high volatility of SWB within the first year of experience. If we neglect these dynamics, we are likely to overlook important predictors that might play a

role in the very early stages of coping with new experience and then lose their significance. Then the list of coping resources would be incomplete.

Limitations

As usual there are a number of limitations that need to be considered when evaluating the findings of the present study. One limitation of this study is that the measure of life satisfaction is only available on a yearly basis. Therefore, we were not able to trace individuals' life satisfaction, as they move from the 1st quarter after the event to the 2nd quarter, and so on. Even though the methods of panel data analysis which allow controling for the unobserved heterogeneity were implemented, unavailability of more frequent measures of SWB makes it impossible to trace the complete adaptation process at a higher temporal resolution.

Another limitation is that in some cases the *formal* aspect of a critical life event, such as the date of actually getting legally married or divorced, which is the date identified in the SOEP data set, is not necessarily the best marker in terms of SWB dynamics. These formal events might be preceded by more or less extended periods of cohabitation or separation and, therefore, represent only an approximation to the "turning point" in the actual adaptation process. In these cases other points in this process, such as the start of cohabitation or separation, might add to our knowledge about the SWB dynamics related to marriage or divorce. Nevertheless we used the formal status passages as usually is the case in the literature, which mostly investigates the formal transitions. However, inclusion of informal transitions would definitely enrich our insight into adaptation process.

5 Conclusion and Next Research Steps

Individual choices, along with personality and context, are an important influence on subjective well-being. The probability of certain choices and their outcomes certainly depend on the personal and contextual resources available to the individual. While making an attempt to estimate the effect of a choice / event on SWB and trace it in the short- and long-run, temporal distance since the event should be such that it allows to outline a precise trajectory of adaptation process. This study made an attempt to answer the question whether it is justified to apply the same timing scale for all events in order to grasp all important stages of adaptation. We conclude that events differ by the degree of SWB sensitivity to the temporal distance since an experience. Implementation of the same timing scale for all events, regardless their properties, may lead to distortion of pre- and post-event trajectory of life satisfaction.

The study offered a formal way to determine which timing scale is more applicable for investigating adaptation to a certain event. Albeit it has introduced certain methodological innovations, the research design did not depart from the mainstream tradition in one important aspect; namely, it outlines 'one trajectory for all'. The results showed how *an average* individual adapts to an event; this approach certainly conceals the range of possible individual reactions. However, it is important to distinguish not only between events, but also between individuals. We turn to the issue of inter-individual differences in the next study, which deals with one critical event – divorce.

III. "She Got the Goldmine, I Got the Shaft"[42]: Inter-individual Differences in Adaptation to Divorce (Latent Class Approach)

Although divorce is generally regarded as a negative event, the literature on adaptation to divorce yields controversial findings. It is often reported as detrimental to subjective well-being (SWB) in the short or even in the long run, but it can also have positive consequences. This study used latent growth mixture modeling to deconstruct the averaged trajectory of pre- and post-divorce SWB dynamics. The analysis revealed three distinct classes of people who follow different patterns of adaptation – stable, recovering and chronic strain. A number of external and internal resources – age, gender, income, employment status, social support, number of roles – predict class membership.

1 Introduction

The impact of life events on SWB has been widely discussed during past decades within the framework of hedonic treadmill model (Brickman & Campbell, 1971), which claims that even though a major life event is usually accompanied by considerable increase or decline in SWB, this change is temporal and followed by return to a person-specific baseline. The phenomenon of hedonic adaptation has been studied with regard to various transitions, such as change in marital (Bonnano *et al.*, 2002; Frey & Stutzer, 2002; Lucas, 2005; Zimmermann & Easterlin, 2006) and parental status (Clark *et al.*, 2008; Frijters *et al.*, 2010), employment status (Clark *et al.*, 2008), income (Brickman *et al.* , 1978; Frijters *et al.*, 2010), appearance (Frederick & Loewenstein, 1999), health (Brickman *et al.*, 1978; Lucas, 2007). The hedonic treadmill model required substantial revision (Diener *et al.*, 2006) after it was shown that i) there is hardly any adaptation to some experiences (i.e., unemployment), ii) there are great inter-individual differences

[42] "She Got the Goldmine (I Got the Shaft)" is a song written by T. DuBois and sung by Jerry Reed, an American country music singer. Released in 1982.

in speed and degree of adaptation, iii) adaptation is just one of numerous patterns of event-related SWB dynamics rather than a universal rule; other patterns, such as stability (i.e., no visible reaction), are much more wide-spread than may be assumed (Bonnano *et al.*, 2002; Burke, 2007).

Evidence on the impact of marital dissolution on SWB is highly mixed; some studies (e.g., Lucas, 2005) show long-lasting negative consequences, others point to possible positive outcomes (e.g., Clark *et al.*, 2008). Such discord in results is due to several factors. First, unlike with marriage, when both partners expect to derive a certain utility from their decision, divorce can be involuntary; as a result, utility derived by former partners might greatly differ. Second, change in public attitude towards divorce also allows more variation in perception of marital dissolution by others, which might differ across cohorts and milieus. Finally, the impact of divorce on SWB is moderated by available resources (personal and external), such as income, labor force status, presence of young children, and so on (see Amato, 2000, for review). These factors imply that inter-individual differences in reaction to divorce are so large that an attempt to outline a single trajectory of SWB dynamics is a misleading approach, since averaging across a whole population might conceal groups of individuals who significantly differ in their pre- and post-event SWB dynamics.

Although the coping literature offers a number of important findings, many findings come from selected samples, for example, individuals who sought psychotherapeutical help after divorce (e.g., Kressel, 1980). The current study profits from availability of large-scale nationally representative data from the Socio-Economic Panel (1984 – 2008) and focuses on inter-individual differences in the reaction to marital disruption. We have used latent growth mixture modeling to test whether divorced individuals form distinct classes which follow different trajectories of SWB. Furthermore, we identify the internal and external resources which predict class membership.

1.1 Hedonic adaptation

Hedonic adaptation is a reduction in the affective intensity of favorable and unfavorable circumstances (Frederick & Loewenstein, 1999). This phenomenon has been addressed within the hedonic treadmill model (Brickman *et al.*, 1978), which claims that even the most dramatic experiences, such as becoming disabled as a result of an accident or winning a large sum in a lottery, have much less impact on subjective well-being than might be expected. This theory contributed to development of the set-point paradigm, the central tenet of which is that after any kind of experience individuals return to their 'baseline' of well-being. Hedonic adaptation serves several functions, such as the distribution of our resources over all important life domains (instead of focusing just on one), assuring that individuals are able to attend to new information which helps them in guiding their behavior and leads to more efficient emotional functioning, and so on (see Frederick & Loewenstein, 1999, for review). Hedonic adaptation consists of anticipatory and reactive components, divided by the experience of the event itself.

SWB, which can be defined as judging life positively and feeling good (Diener *et al.*, 1997) is treated within this project as a proxy measure of hedonic adaptation. In this study we use overall life satisfaction as an indicator of SWB. Following the logic of the 'tripartite' model (Diener *et al.*, 1999), which distinguishes three components in SWB – satisfaction, positive affect and negative affect, we treat life satisfaction as a cognitive-based evaluation of one's life, which reflects good fit between personal aspirations and perceived reality (Grob, 1996).

1.2 Adaptation to Divorce: Important Inter-individual Differences

The early literature was dominated by the view that marital dissolution is a stressful experience that has negative consequences for well-being. The later word, however, proves that divorce is a controversial event for it has potential for both posi-

tive and negative outcomes. Divorce may lead to lower happiness (Erbes, 1984; Kitson & Morgan, 1990; Forste, 2004; Gahler, 2006), health problems and higher mortality (Vallin, 1979), accumulation of further negative life events (Amato, 2000), poor self-concept and self-acceptance (Amato, 2000). At the same time, it is reported that divorce potentially leads to higher life satisfaction (Clark *et al.*, 2008) and mental health (Oswald & Blanchflower, 2006) scores. There exist substantial gender differences in the reaction to divorce. Despite lowering the standard of living (Andress & Bröckel, 2007), divorce appears to have a 'liberating' effect on women (i.e., leading to increase in such personality facets as position emotions, activity, gregariousness, fantasy and actions), whereas men face 'demoralizing' consequences, namely, going upward on depression and declining on competence, achievement striving, self-discipline, and deliberation (Costa *et al.*, 2000).

As it is often the case that one partner wants the divorce, while the other does not, the absence of a uniform reaction is natural. The initiator usually expects benefits from ending the dissatisfactory marriage and often receives them, which results in an increase in SWB – if the decision utility is predicted correctly; if utility is mispredicted, SWB should remain on the low level (if not drop further). At the same time, even though divorce is usually seen by at least one of the partners as a solution for an unhappy marriage, and might lead to certain positive outcomes in the long run, it does represent a challenge to the well-being equilibrium. Even the initiator of a divorce faces the necessity to readjust to the new situation, which might take time. Our own analysis (see Study 1) has shown that, on average, short-term consequences of divorce for SWB are negative; positive outcomes emerge over the long run.

The initial reaction to divorce may be both positive and negative. The dynamics of SWB prior and after divorce is also characterized by a high degree of variability. The question, whether or not hedonic adaptation to divorce occurs, has been addressed by

several theoretical models; the crisis model (which is, substantially, compatible with the hedonic treadmill model), the chronic strain model and selection perspective being the most prevalent ones. The crisis model (Amato, 2000) suggests that the effect of divorce is temporary, although some individuals may face long-term consequences, depending on the amount of coping resources available. Stages of coping with divorce are similar to those of dealing with other stressful events, such as death of the partner, accepting non-curable sickness, etc. (Kressel, 1980). They include a period of denial, a period of mourning, a period of anger, and a period of readjustment. The chronic strain model, on the contrary, argues that divorce leads to persistent strains (parental, financial, and emotional), which are associated with nearly indefinitely lowered levels of SWB. The empirical evidence is mixed. Contrary to earlier work, which had persistently found negative effects of marital dissolution on subjective well-being (Lucas, 2005), more recent analyses find rapid and complete adaptation to divorce (Clark *et al.*, 2008; Frijters *et al.*, 2010; Clark & Georgellis, 2010). Moreover, a large body of literature points to the fact of anticipatory coping (Aspinwall & Tayler, 1997), that is mourning about the end of the relationship takes place even before the actual separation takes place; adaptation, thus, takes place entirely during the anticipatory stage (Wang & Amato, 2000); if this is the case, then SWB declines prior to divorce, and reverts to baseline levels thereafter.

Some individuals have an elevated risk of getting divorced due to certain personal characteristics; this phenomenon is called self-selection. (Amato, 2000; Johnson & Wu, 2002; Lucas, 2005; Zimmerman & Easterlin, 2006)[43]. Change in marital status does not make them more satisfied, though: individuals, who are self-selected into divorce, re-

[43] However, it is also possible that the level of SWB remains low after the divorce due to mispredicting the utility of the decision (Frey & Stutzer, 2006), rather than being selected into divorce (i.e. an individual, living in an unhappy marriage, seeks divorce as a solution, but runs into other difficulties afterwards). Thus, we can possible face equifinality, when chronically low levels of SWB can be attributed to two possible mechanisms.

main on a low level of SWB both during anticipatory and reactive stages of adaptation process.

Recent research on stressful negative events, such as loss of partner, suggests that staying at the same level of SWB throughout the whole experience is more common than once believed (Bonnano *et al.*, 2002; Greve & Staudinger, 2006). Supposedly, the same reaction can be found in case of divorce.

Although differences between studies can, to some extent, be explained by differences in methodology and samples, the mixed evidence suggests that a trajectory that averages across a whole population might conceal a number of patterns of anticipation and reaction to divorce, with some subgroups profiting more than others. Supposedly, divorced individuals can embark onto one of the following trajectories: i) anticipatory coping trajectory, characterized by decrease in SWB prior to divorce and rapid / gradual increase afterwards, ii) chronic strain trajectory, with SWB declining after divorce and remaining on a lower level, iii) a stable low pattern, characterized by low levels of SWB both prior and after marital disruption[44], and iv) a stable trajectory.

1.3 Moderators of Adaptation to Divorce

According to *the protection paradigm* (Forste, 2004; Soons & Liefbroer, 2008), certain social statuses have protective potential and therefore the transition into a 'protective' status (or, out of a 'protective' status) either enriches or depletes a person's resources; in other words, family or labor market status is linked to availability of resources. For instance, marriage provides social, emotional and financial support, and divorce deprives of such important resources of well-being. The effect of marital dissolution might be temporal or permanent, depending on the ratio of pre- and post-event

[44] This pattern might reflect both self-selection into divorce and misprediction.

amounts of resources. Resource-rich persons will recover more quickly than resource-poor divorcees.

The growing body of literature on moderators influencing the coping with critical life events contributes to the specification of the protection model and implies that the average trajectory of adaptation, outlined for the whole population, can be highly misleading, since it carries little information about specific patterns of variation across individuals. Indeed, experience of divorce significantly varies across a number of demographic, psychological, social, and economic factors. Several groups of moderators of adaptation to divorce are distinguished in the literature (Amato, 2000): demographic characteristics, resources, and the subjective definition and meaning of divorce. Although technically it makes sense to differentiate between these groups of moderators, conceptually, demographic characteristics matter mostly because they facilitate or inhibit access to certain protective resources. Age, for example, might make it easier or harder to find a job after having become unemployed; gender can facilitate or hamper gaining economic resources due to wages inequality. Therefore, in this study, we do not treat demographic characteristics as a separate group of adaptation moderators; instead, we view them as proxy measures of access to other resources. Resources are defined as material, social or personal characteristics that a person possesses and that he or she can use to make progress towards his or her goals (Diener and Fujita, 1995). Following Staudinger and colleagues (1995), we have distinguished two groups of resources – external (social, economic, and physical feature of environment) and internal (i.e., personality traits and self-regulation strategies). In the following we summarize the major findings on how resources may influence the adaptation process to divorce.

Internal Resources

Gender. In the same way as the life course is shaped differently for men and women, two genders do not react to divorce in the same way. There could be two rea-

sons for that. Firstly, gender, although it is not a resource *per se*, might be thought to facilitate or complicate the access to certain resources, and as such gender will moderate the well-being effect of the event. Secondly, men and women acquire different coping styles via the socialization process. According to some authors, women are more likely to engage in self-focused, ruminative responses to a depressed mood; the tendency to ruminate is associated with longer and more severe periods of depressed moods in women than in men (Nolen-Hoeksema, 1995). The empirical findings with respect to gender differences following divorce tell a mixed story: some work finds a stronger effect for women (Kalmijn & Monden, 2006), while others find a stronger effect for men (Andress & Bröckel, 2007). Women are negatively affected due to financial strain, reduced social contacts due to role overload (Kressel, 1980), and chances for remarriage decrease more strongly with age (Roshchina & Roshchin, 2006).

Age. Age may have an effect on the adjustment to divorce because of a) cohort effects that influence the normality of divorce for a given birth cohort, and b) chronological age. Belonging to a certain generation / cohort might influence the meaning of divorce for the individual. The rate of divorce within the age group defines the degree of acceptance: the more common divorce is, the less stigmatized divorcees are and it is less likely that divorcees attribute the divorce to their own failure (e.g., Ryff & Dunn, 1985). As mentioned above, age can also affect the chances of forming a new partnership. Older people mostly show poorer post-divorce adjustment (Wang & Amato, 2000).

Attributional style and control beliefs. The way people think about their divorce and explain it is able to promote or inhibit adjustment to this transition. Making attributions about responsibility for divorce and feeling control over one's own life are important psychological resources. Newman & Langer (1981) found that making interactive attributions (i.e., explanations, which point to interaction within the couple rather than

to personal characteristics of self or spouse) facilitates post-divorce adjustment. Wang and Amato (2000) point out that the initiators of divorce adjust more quickly due to feeling in control of the situation.

Health. Having health problems may be a risk factor in the process of post-divorce adjustment, since a) divorce itself can have detrimental outcomes for health (Amato, 2000; Vallin, 1979), b) health is positively associated with other major coping resources, primarily, income (Oswald & Gardner, 2006), but also chances on the marriage market.

Number of roles. Role overload may lead to a reduction in SWB. For example, women who, after marriage, live in households with a complete division of labor (i.e., one-breadwinner model), report, on average, much higher life satisfaction scores than their female colleagues who combine work with family; reduction of SWB is especially remarkable for women with children (Frey & Stutzer, 2006). A large part of negative consequences of divorce for women is related exactly to the work-family conflict (Williams, 2006). On the other hand, being able to focus on more than one role can exert a protective effect; for example, women who were not heavily focused on their marital identity adjust to the end of their marriage easier (DeGarmo & Kitson, 1996). Involvement in social activities is an efficient coping strategy in the process of post-divorce adjustment (Berman & Turk, 1981). Additional evidence comes from the literature on self-complexity. Individuals higher in self-complexity (representing the self in terms of multiple self-aspects) are found to be more resistant to depression and physical symptoms occurring due to stressful events (Linville, 1987).

External Resources

Socio-economic status. Speed of adaptation to marital disruption is positively correlated with education (Booth & Amato, 1991) and being employed (Wang & Amato, 2000). Sufficient financial resources appear to be especially important for

women because it is them who experience considerably sharper decline in standard of living after divorce (Smock, 1994). The amount of divisible assets also matters: scarcity of resources hampers adjustment (Kressel, 1980).

Forming a new partnerhship. In general, being able to maintain existing social networks and build new ones fosters adjustment to divorce (Amato, 2000). Forming a new partnership is especially profitable (Aseltine & Kessler, 1993, Mastekaasa, 1994, Wang & Amato, 2000,).

Presence of young children. Even though social support is a known moderator of adaptation, being a support provider sometimes appears as a risk factor; for example, women with young children experience a sharper fall in subjective well-being after divorce (Williams, 2006).

Interaction between partners. Discrepancy in partners' willingness to end the marriage, which results in emotional ambivalence in the parties, hampers adjustment, especially when former spouses enter the negotiations about division of resources and children custody (Kressel, 1980). *Imbalance of power* between partners, which manifests in one partner having less access to resources and decision-making, is also a risk factor (Kressel, 1980). *Marital quality* is another important predictor of post-divorce SWB dynamics: persons in high-distress marriages experience an increase in happiness after the separation, whereas being in a low-distress marriage leads to decline (Amato, 2007; Kalmjin, 2006). Finally, being a spouse who initiates the separation is a strong protection factor (Amato, 2000).

Cultural environment / meaning of divorce. Every private choice is embedded into a cultural and economic environment. Adjustment to divorce may be influenced by the public perception of this event. As divorce becomes more common, it becomes less stigmatized; this development should lessen the negative consequences of divorce for SWB. However, divorce still remains an event with controversial meaning. Scholars, as

well as lay public, may support one of two dominating views on union dissolution (Amato, 2000). Some (e.g., Layard, 2005) believe that increase in the frequency of marital disruption destabilizes one of the most fundamental social institutions, signifies decrease in overall quality of life, and gives rise to numerous social problems (e.g., alienation, substance abuse, behavioral problems in children, depression, etc.) Others see growing acceptance of divorce as a positive sign, since marital dissolution may present an exit from a dysfunctional relationship. Personal systems of values and meanings of divorce, as well as the view dominating in the milieu an individual lives in, is a moderator of adjustment to divorce.

Unfortunately, due to data constraints, we are not able to test all the described predictors. In the further analysis we focus on gender, age, social support, presence of young children, socio-economic status, control beliefs, number of roles, and health.

1.4 The Current Study

Based on the existing literature, we hypothesized that marital dissolution does not evoke a uniform reaction. Rather than that, we assumed the existence of several distinct groups of individuals which match theoretical models of coping with divorce. Furthermore, we attempted to identify predictors of embarking onto a certain trajectory. In this study we did not conceptualize 'adaptation' as a return of SWB to the 'baseline' after an event-related decline/increase. Rather than that, we referred to 'adaptation' as any SWB dynamics evoked by a critical life experience.

Hypothesis I: Individuals vary in SWB dynamics, related to divorce. On the basis of existing theoretical models we expected to find the following five patterns of anticipatory and reactive adaptation to divorce: i) recovery trajectories: decline in life satisfaction prior to divorce, and gradual increase after, or rapid decline right after the divorce, and gradual increase after; ii) stable trajectory; iii) chronic strain trajectory: rapid

decline right after the divorce with no improvement after; iv) stable low trajectory: low levels of SWB both prior and after the divorce.

Hypothesis II: Subgroups with different adaptation trajectories vary by external and internal resources.

IIa. Education, income, social support, internal control, and good health are protective factors which increase the probability of following the stable pattern.

IIb. Being unemployed and role overload are risk factors which increase the likelihood of belonging to adjustment or chronic strain trajectories due higher volatility of SWB around the time of divorce. The presence of young children is a risk factor for women.

2 Method

2.1 Sample

To investigate the hypotheses formulated above, we used data from the eighteen waves of the SOEP, 1991-2008, West and East German subsamples (Haisken-DeNew & Frick, 2003). The SOEP is a longitudinal nationally representative survey of persons and households, which was started in the FRG in 1984. In 1990 the survey was expanded to the former GDR. The SOEP samples were composed by means of the multistage random selection method. The SOEP questionnaires cover a range of topics, such as education and qualification, labor market and occupational events, income, social security, household composition, health, housing conditions, family dynamics, values and attitudes, and the subjective evaluation of life domains and life in general. The interview design aims to obtain face-to-face interviews with all members of a household who have reached the age of 16; new members are asked to join the survey. One member of the family provides information about the household and the children in the household.

Family members, who have left their household, are followed up at their new place of residence. The SOEP has low attrition (3-13%) and high response (60-70%) rates.

In this study we focused on the subsample of respondents who reported a first divorce between 1991 and 2008 and provided an evaluation of their life satisfaction at the time of divorce. The initial subsample of divorcees consisted of 767 individuals. We did not remove the data of participants who remarried within next five years after divorce; this was done because we hypothesized that having a new partner is an important resource of post-divorce adjustment. We analyzed eleven waves of data; this timespan encompassed five years prior to divorce, five years after divorce, and the year of the event itself. For 168 (22 %) participants, the data on life satisfaction were available for all eleven measurement occasions, the mean number of observations was six, 47 (6.2 %) respondents had only one available estimation of life satisfaction (at the year of divorce). These observations were excluded from the analysis. The resulting sample consists of 720 cases. Table 3 (see Appendix) provides descriptive information of respondents' socio-demographic characteristics.

2.2 Analytical Technique

In order to identify latent trajectories of reacting to divorce, we used latent growth mixture modeling, LGMM (Muthen & Muthen, 2000). This modeling strategy tests whether the sample consists of distinct classes of individuals with different growth trajectories. Missing data was handled with Full Information Maximum Likelihood (FIML) estimation procedure, which allowed keeping cases with missing values on some measurement occasions instead of dropping them or imputing data.

In order to grasp the dynamics properties of the data (McArdle & Hamagami, 2003), namely, differentiate overall changes in life satisfaction from event-related changes (Pinquart & Schindler, 2007), we specified a univariate latent difference score

model, which is basically an extension of latent growth model. In this approach we deconstruct each observed score $Y[t]$ into true latent score $y[t]$ and error component $u[t]$. Latent difference score $\Delta y[t_n]$ is defined as follows:

$$\Delta y[t]_n = y[t]_n - y[t\text{-}1]_n$$

Latent changes are defined as accumulation of the first differences among latent variables (McArdle & Hamagami, 2010), and the overall trajectory incorporates accumulation of the latent changes $\Delta y[t]$ up to the time t:

$$Y[t]_n = y_{0,n} + (\sum_{i=1,t} \Delta y[i]_n) + u[t]_n$$

The model in this study incorporated *dual change score*, because it allows estimating two types of change: systematic constant change (α) and systematic proportional change β:

$$\Delta y[t]_n = \alpha y_{s,n} + \beta y[t\text{-}1]_n,$$

where y_s is a latent slope score, which is *constant* over time, α is a coefficient that describes this change; $\beta y[t\text{-}1]_n$ is a *proportional change score* equation component, which includes $y[t\text{-}1]$ as a latent score at the previous measurement, and β is a coefficient which describes the change. The coefficient α is fixed at 1, in order to be able to identify the slope mean, μ_s.

Figure 2 illustrates path diagrams of the latent growth mixture model. Specification of the model went through several stages. As a first step, we specified a model with only two growth factors – intercept (i.e., level of life satisfaction right after divorce), and a linear slope. Then, we tested whether inclusion of quadratic slope improved the model fit (as it did not, quadratic slope was not retained in the final model).

The divorce literature suggests that the estimation of short-term SWB changes bears crucial importance, as adaptation to this event might be rapid and complete. If we overlook short-term changes, we might obtain a rather imprecise trajectory of well-being

around divorce. Reasoning so, we sought a modeling strategy that would allow tackling this issue. Following the strategy, described by Schindler & Pinquart (2007), we introduced two additional growth factors, 'Pre' and 'Post', which allowed estimating short-term changes in life satisfaction related to divorce. Growth factor 'Pre' estimates refer to the mean change in life satisfaction between one year before divorce and the first measurement after divorce (which could happen in 1-12 months); growth factor 'Post' estimates the mean change between the first and the second measurements after divorce (the time span could hypothetically encompass from 12 to 24 months).

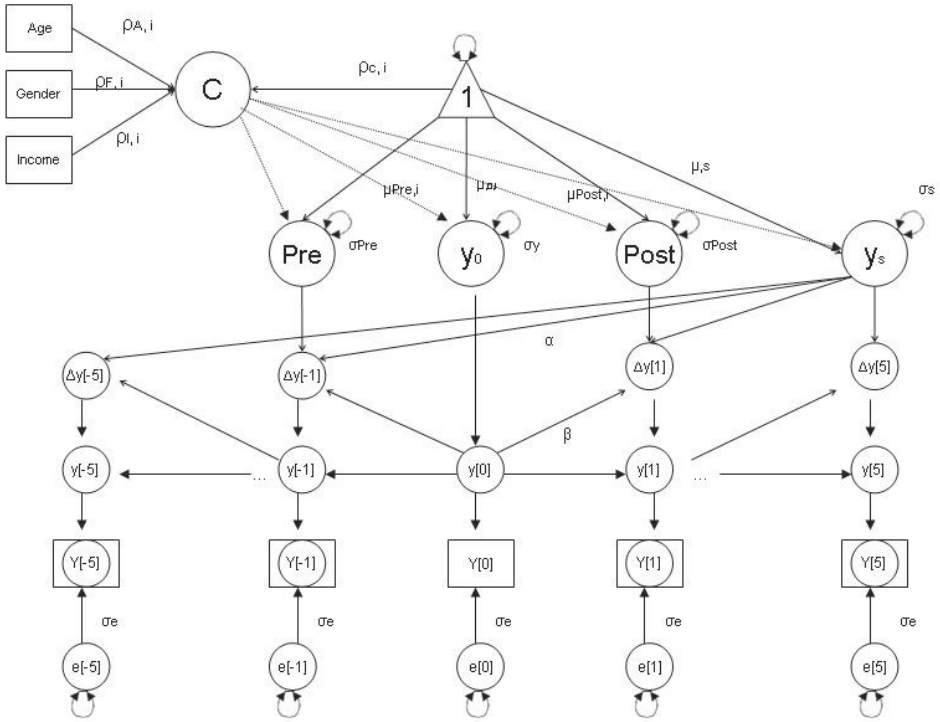

Figure 3. Latent Growth Mixture Model for Changes in Life Satisfaction Prior and After Divorce.

y_0 – intercept, y_s – linear slope, C – categorical latent class variable, Pre – mean change in life satisfaction between one year before divorce and the first measurement after divorce, Post - mean change between the first and the second measurements after divorce. All paths depicted with solid lines are fixed at 1.

In our analyses, variances of all observed (Y) and latent variables (y), as well as variances of change scores (Δy) were fixed at zero. The categorical latent class variable C shows that for all four growth factors means and variances are allowed to vary across classes. All residuals (σ) were set to be equal. The intercept and the slope were allowed to correlate.

The next step in the model building was class enumeration. Existing literature on adaptation to divorce allowed to distinguish four trajectories (latent classes). Therefore, after having established the final numbers of growth factors in one-class model, models with different number of classes – from one to four – were tested. Following the suggestion of Petras and Masyn (2009), we sought a solution with the smallest number of classes needed to describe the heterogeneity of the target population. Several likelihood-based indices were used to compare models in order to find the most plausible solution: Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and sample-size adjusted BIC (SSBIC). These criteria provide relative measures of information loss, being a function of log likelihood and model complexity. Lower values indicate better fit. Another measure, entropy, was used to estimate the accuracy of placing individuals in classes; entropy can take any value from zero to one, with higher values indicating better fit. Furthermore, two tests, which formally compare a K-class model and (K-1)-class model, were employed – the Vuong-Lo-Mendel-Rubin test (Muthen, 2003) and the parametric bootstrapped LRT (BLRT, Nylund, Asparouhov, & Muthen, 2007). Statistically significant p-value suggests that the choice should be made in favor of K-class model.

After having an unconditional growth model fitted, several predictors of differences in the change process were included. Although the number of covariates of interest was quite large, inclusion of too many covariates would lead to computation difficulties. Therefore, the list of antecedents was limited to gender, age, and income. These

covariates are well documented in the coping literature as important coping resources (Aseltine & Kessler, 1993, Wang & Amato, 2000). In this analysis we estimated the indirect effect of the covariates, that is, they were allowed to predict only latent class variables.

2.3 Measures

Life Satisfaction

As a proxy measure of the reaction to an event, we used one principal dependent variable – life satisfaction. It is measured with item "How satisfied are you with your life, all things considered?" Responses are distributed on an 11-point scale (0-10), where 0 corresponds to 'Completely dissatisfied" and 10 mean "Completely satisfied".

Predictors of Class Membership

Age was included as a continuous variable; it was centered, in line with the suggestion of Petras and Masyn (2009), to prevent a radical shift in how the centroids of the latent classes are located and facilitate comparisons between unconditional and conditional models. *Gender* was coded '1' if the respondent was female, '0' – if male. *Number of years of education* is a constructed variable, which indicates the number of completed years in education at the time of survey. For income measurement we use annual household post-government income (a generated variable) adjusted to the number of household members. *Household post-government income* represents the total family income (including revenues from labor earnings, asset flows, retirement and social security pensions, private and public transfers), after taxes. The data were taken from the Cross National Equivalence File. A log function was applied to the adjusted post-governmental household income because the distribution was positively skewed; also, the variable was centered. Assuming that considering financial well-being only at the time of divorce might be confounded by temporal fluctuations in income, we averaged

income values across five years prior to divorce to obtain more robust estimations. *Labor force status* was identified as either employed (full-time or part-time), or unemployed (identified as being not employed and officially registered as unemployed).

For measuring *physical health*, two indicators were used – annual number of stays in hospital and annual number of doctor visits. The measures were z-standardized and averaged. Applying the same reasoning as in the case of income, we averaged health scores across five years prior to divorce. Higher scores indicate more health problems.

For measuring whether a person has a new partner, we selected one binary indicator – whether or not the respondent has formed a new intimate relationship within next three years after divorce (remarried or cohabiting). The variable *small children* is coded '1' if the respondent has children of preschool age (below 7 y.o.), '0' – if the respondent has no young children. We did not take into account the number of young children. In our analyses we also included an interaction between gender and presence of young children.

We hypothesized that the number of social roles a person undertakes can be a predictor of adaptation trajectory. Engagement in multiple roles may exercise a protective function when dealing with negative experiences or lead to increase in well-being in case of positive events; at the same time, role overload may be detrimental to well-being. To account for the number of roles, we used a multiple-item indicator from the SOEP data, describing frequency of participating in various activities. Implementation of this indicator was complicated by two issues: missing waves (1991, 1993, 2000, 2002, 2004, 2006), and different composition of the measure in different waves[45]. To deal with different measure composition, we used only items which are available in both 8-

[45] In some waves, the list of activities contains 16 items, in others – only 8.

item and 16-item versions (these are: participate in local politics, attend church, perform volunteer work, visit neighbors / attend social gatherings, participate in sports, attend cultural events, attend cinema and concerts). As a next step, we used a median split to turn the continuous variable into a categorical one. The response was coded '1' if the frequency of participation is above 50% in the response distribution[46]. In order to impute values in missing values, we averaged all available for the respondent scores; the mean score was imputed in missing waves. We hypothesized that the relationship between the number of roles and protective potential can have an inversed U-shaped function; in other words, it is the optimal number of roles (i.e., not too many, but not too few), rather than having many roles, that has protective potential. Therefore, in our analyses of class membership predictors we tested two variables: a continuous variable describing number of roles, and a dichotomous variable, which was coded '1', if the respondent's number of roles corresponded to the middle 50% of the distribution (2 or 3 regular activities, in our case), and was coded '0' if the number of roles corresponded to either first or last quartile of the distribution (0, 1, 4, or 5 regular activities). '1' stands for 'optimal' number of roles. Only the latter variable was retained in the final model.

In the SOEP, items measuring *control beliefs*, are available in five waves (1994, 1995, 1996, 1999, 2005). Again, two problems – missing waves and non-identical measures – were encountered while using this indicator[47]. To overcome these difficulties, we

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[46] That is, participation in local politics, volunteer work and attending church are coded '1" if a person participates at least once a month. Attending social gatherings is coded '1' if a person does that at least once a week; attending cultural events, going to concerts and cinema and participation in sports are coded '1' if a person participates in these activities at least once a month. If a person is active in at least once activity in a cluster, then a 'role' (i.e. involvement in community life) is coded '1'.

[47] Items are identical in the years 1994, 1995, 1996, and in 1999 and 2005. Items in the year 2005 include: "How my life goes depends on me", "Compared to other people, I have not achieved what I deserve"*, "What a person achieves in life is above all a question of fate or luck"*, "If a person is socially or politically active, he/she can have an effect on social conditions", "I frequently have the experience that other people have a controlling influence over my life"*, "One has to work hard in order to succeed", "If I run up against difficulties in life, I often doubt my own abilities"*, "The opportunities that I have in life are determined by the social conditions"*, "Inborn abilities are more important than any efforts one can make"*, and "I have little control over the things that happen in my life"*. Items for the year 1996 in-

z-standardized total scores, averaged them across all available observations, and imputed the mean score in missing waves. Higher scores indicate higher inclination to internal control beliefs.

3 Results

Specification of the Growth Parameters

As a first step of growth model specification, we fitted a model with only two growth factors – intercept (i.e., level of life satisfaction right after divorce), and a linear slope. Then, we included, one by one, three other growth factors – quadratic slope, Pre and Post. To test, whether or not these additional growth factors improved the model fit, we computed a chi-square difference test based on log-likelihood values and scaling correction factors obtained with the maximum likelihood robust (MLR) estimator (see Mplus User Guide, Muthen & Muthen, 1998-2006). Adding a quadratic slope did not significantly improve goodness of fit, $\chi^2 = 3.6$, $p = 0.1652$ ($df = 2$). Therefore, quadratic slope was excluded from the final model. Inclusion of the growth factor Pre did improve the model fit, $\chi^2 = 6.7$, $p = 0.0350$ ($df = 2$). Introduction of the growth factor Post also yielded a better fit: $\chi^2 = 10.4$, $p = 0.0055$ ($df = 2$).

After having obtained a model with four growth factors, the next step of the analysis – class enumeration – was taken. Based on the theoretical considerations, models with one to four classes were compared across several indices of fit. Values of AIC, BIC, sample-size adjusted BIC (SSBIC), entropy, LRT and BLRT for unconditional models are presented in Table 6. The results do not provide a non-ambivalent

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clude: "I determine what happens to me in life", "It is useless to make plans because they seldom work out"*, "My behavior determines my life", "No one can escape their fate, everything in life happens as it must happen"*, "If I get something I want then it's mostly due to luck"*, "Most plans I make are successful", "There is little sense in planning ahead because something unexpected always comes up"*, and "Things always happen differently, one can't rely on anything"*. Responses to few items marked with * were inverted, so that the higher value indicates internal control.

answer to the question which model represents the best statistical solution. Values of AIC, BIC, and SSBIC gradually decrease with increase of model complexity (which indicates a better fit), however, classification accuracy (entropy) declines. LRT shows no improvement of the four-class model as compared to the three-class model; at the same time, BLRT suggests that the four-class solution still yields better fit than the three-class model does. Substantially, the four-class model does not change the meaning of the classes that are identified with the three-class solution, but adds a small (3.3%) class characterized by increase in SWB prior to divorce and gradual decline afterwards. Given that the LRT for the four-class model turns out insignificant, that meaning of the fourth class is not well justified by existing theories, and that the changes in AIC and BIC indices are marginal, the three-class solution is chosen for further analysis and interpretation.

Table 6. Indices of Goodness of Fit for 1-to-4 Class Unconditional Models

	1 class	2 classes	3 classes	4 classes
AIC	21668.614	21494.869	21451.767	21428.204
BIC	21737.302	21641.405	21621.199	21620.533
SSBIC	21689.673	21539.796	21503.714	21487.171
Entropy	--	0.845	0.767	0.789
LRT p value	--	0.000	0.079	0.240
BLRT p value	--	0.000	0.000	0.000

After having an unconditional growth model fitted, gender, age, and income were included in the model as predictors of differences in the change process. In this analysis we estimated the indirect effect of the covariates, that is, they were allowed to predict only latent class variable. Mixing proportions and growth parameters' estimates resulting from fitting the conditional growth model closely aligned to the sizes and growth parameters' estimates of classes, obtained with the unconditional growth model; this allows to assume that the covariates' effect has been specified correctly (Petras & Masyn, 2009). The largest class reduced in size for 2.7% (from 76% to 73.2%), which

led to a slight (about 1%) growth of two other classes; all growth parameters' estimates remained virtually the same in the unconditional and the conditional models.

Meaning of Classes

Table 7 represents growth parameters' estimates for the selected three-class conditional model, and Figure 3 depicts estimated trajectories of three classes. The largest class (76 %)[48] unites respondents with a rather high level of life satisfaction, who do not experience much of well-being volatility at the time of divorce. In fact, this class exhibits a small, but significant improvement in life satisfaction at the year of divorce (μ_{Pre} = 0.537, μ_{Post} = 0.353), followed by a bounce back shortly after (within a year). This class exposes a pattern of *stability* with a *temporary relief*[49]. The second largest class (14.4 %) does not exhibit any anticipatory dynamics of life satisfaction (i.e., life satisfaction prior to divorce remains at the same level), but experiences decline in well-being right after the divorce (μ_{Pre} = - 0.475). Life satisfaction continues to decline for another year (μ_{Post} = - 0.638), and thereafter remains on the same level, lower to that of pre – divorce period. This class represents the reaction of an *initial drop*, followed by chronic *strain*[50]. The smallest class (9,6 %) suffers from a rather long anticipation period, as life satisfaction of the respondents starts declining three years prior to divorce. This group shows the lowest level of life satisfaction at the time of divorce (y_0 = 3.87), and the largest divorce-related drop in well-being (μ_{Pre} = -0.679). The recovery, at the same time, is rapid and complete: already in 12-24 months after marital dissolution life satisfaction in this group almost reaches the 'baseline' (i.e., the level of sat-

[48] Here we report class proportions based on respondents' most likely class membership, not proportions based on estimated posterior probabilities; these numbers may slightly differ
[49] Hereinafter referred to as the 'Stability class'
[50] Hereinafter referred to as the 'Chronic strain class'

isfaction before the anticipation phase starts); μ_{Post} = 1.283. This trajectory may be labeled as '*anticipatory decline with full recovery*'[51].

Table 7. Growth Factor Parameter Estimates for 3-Class Conditional Model

Parameter	Estimate[52]	S.E.	p value
Class 1, Chronic strain pattern (N = 104)			
Intercept	4.982	0.342	0.000
Slope	-0.133	0.116	0.251
Pre	-0.475	0.286	0.097
Post	-0.638	0.315	0.043
Class 2, Stability pattern (N = 547)			
Intercept	7.216	0.143	0.000
Slope	-0.162	0.072	0.025
Pre	0.537	0.107	0.000
Post	-0.353	0.099	0.000
Class 3, Recovery pattern (N = 69)			
Intercept	3.869	0.352	0.000
Slope	0.347	0.119	0.004
Pre	-0.679	0.611	0.004
Post	1.283	0.538	0.004

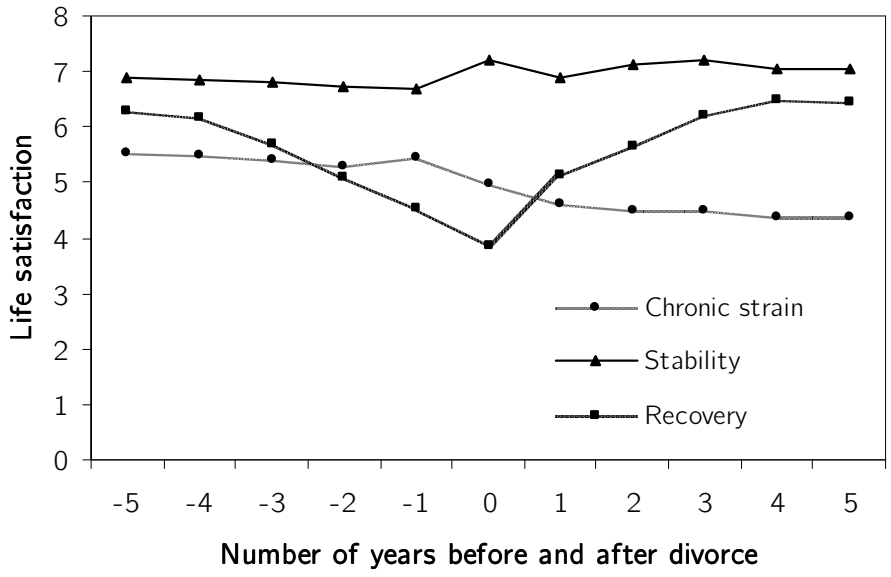

Figure 4. SWB Dynamics Before and After Divorce: Latent Trajectories (Conditional Model, with Covariates)

[51] Hereinafter referred to as the 'Recovery class'
[52] The mean value of the dependent variable – Life Satisfaction

Antecedents of Latent Class Membership

In order to determine which internal and external resources predict latent class membership, we ran multinomial logistic regressions with following independent variables: gender, age at divorce, household income per capita, education, employment status, health dysfunction, control beliefs, number of roles, presence of children of preschool age, and presence of a new partner. Furthermore, as we hypothesized that presence of young children might only be salient for well-being of women, in the Model 2 we introduced an interaction term between gender and presence of young children. Results of our regression analyses are presented in Table 8.

Table 8. Predictors of Class Membership (Results from Multinomial Logistic Regression)

Predictor	Model 1					Model 2	
	Class 1 (chronic strain)		Class 3 (recovery)		Class 2 (stable)	Class 1 (chronic strain)	Class 3 (recovery)
	Mean[†]	Exp (B)	Mean[†]	Exp (B)	Mean[†]	Exp (B)	Exp (B)
Internal resources							
Age at divorce	41.7	1.04*	37.8	0.99	38.7	1.04*	0.99
Gender (female)	52.8	0.50**	50.7	0.50*	56.8	0.52**	0.51
Health dysfunction (z scores)	0.21	1.23	0.05	1.28	-0.10	1.24	1.29
Internal control (z scores)	-0.16	0.69	-0.12	0.80	0.09	0.70	0.71
No. of roles	53.3	0.99	67.7	2.1*	59.7	0.99	2.1*
External resources							
Education	11.0	0.98	10.6	0.93	11.5	0.97	0.93
Income	8.92	0.33***	8.94	0.38***	9.2	0.33***	0.38***
Unemployed	20.0	4.4***	14.7	3.06**	5.8	4.4***	3.07**
New partner	46.2	0.76	39.3	0.44**	62.4	0.76	0.44**
Presence of small children	14.4	0.56	23.3	0.59	28.6	0.67	0.71
Gender*kids (%)	10.0		20.0		19.2	0.73	0.76

Note. [†] Percentage is reported for gender, unemployed, new partner, number of roles, and presence of small children, and the interaction term. Exp(B) stands for the natural log of the odds ratios; a change of one unit on the part of the predictor multiplies the odds by e^B.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The largest group, Class 2 (Stability with a temporary relief), was treated as the reference group. Among predictors included in the model, education, control beliefs, health dysfunction, and presence of young children turned out to be insignificant. In comparison with two other groups, the members of the Stability class are more likely to be female, have higher income, and are less likely to be unemployed. They are also younger than the members of the Chronic strain group, but no age differences are found between the Stability and the Recovery classes. Respondents from the Stability group are more likely to have a new partner shortly after the divorce than those who belong to the Recovery group; rather unexpectedly, they are less likely to have an optimal number of social roles in comparison with the Recovery group.

Members of Classes 1 ('recovery') and 3 ('chronic strain') have certain characteristics in common (i.e., they are more likely to be male than members of the 'stable' group, to have lower income and to be unemployed). At the same time, they differ in a number of ways both from the 'stable' group and from each other. In order to test the differences between these two classes, we ran additional multinomial logistic regression models with another reference group – the chronic strain group[53]. Members of the chronic strain group are older than two other groups (Exp B = 1.05, p = 0.02, in comparison with the 'stable' group; Exp B = 1.05, p = 0.06, in comparison with the 'recovery' group). Members of Class 3 (anticipatory decline with full recovery) are less likely to have a new partner than the Stability group, and, rather unexpectedly, are somewhat more likely to have optimal number of roles than members of two other groups (Exp B = 1.86, p = 0.08, in comparison with the Stability group; Exp B = 1.97, p = 0.09, in

[53] In order to avoid too many tables, we report the significant findings of these supplementary analyses in the text.

comparison with the Recovery group). We did not discover any differences between effect of presence of young children in the household on men and women[54].

4 Discussion

Results largely confirmed our hypotheses. The findings show that different types of coping with divorce were identified. Groups are greatly unequal in size. Members of the largest group ('Stability') experience slight improvement around the time of divorce but otherwise demonstrate a largely stable pattern. The smallest group ('Recovery') experienced a large drop, preceded by few years of anticipation, and followed by rapid and complete recovery. For individuals from this group, divorce appears to be a solution for an unhappy marital union. The remaining group ('Chronic strain') demonstrated a chronic strain pattern, exhibiting a decline in SWB right after divorce and showing no signs of adaptation in the subsequent years.

Latent class analysis allowed to identify different types of coping with divorce. Thus, our analyses confirm findings from previous studies that marital disruption might have both positive and negative consequences for SWB.

Strictly speaking, two groups in our sample (the 'Stability' and the 'Recovery' classes) fit into a pattern described by the hedonic treadmill model, namely, decline/increase of SWB at the time of divorce, followed by a gradual return to the individually specific 'baseline'. However, given that the difference in the effect sizes of SWB change at the point of divorce, the duration of changes, and the initial levels of SWB (i.e., level of life satisfaction at the t[-5], we argue that these two categories need to be conceptually distinguished from the each other. The recovery trajectory corresponds to

[54] It should be noted, however, that in the separate regression analysis for all predictors (i.e. when only gender, presence of young kids and the interaction terms were included in the model), presence of young children diminished the likelihood of being in the Stability class in comparison with the Recovery class (Exp (B) = 0.24, p = 0.09). Children appear to be somewhat of a risk factor. Apparently, other covariates moderate this relationship: for example, when including income as a control variable in the reduced model, both presence of kids and the interaction term lost significance.

the crisis model, described by Amato (2000), and supported by findings of Clark *et al.* (2008), Frijters *et al*. (2010); Clark & Georgellis (2010). The chronic strain trajectory is consistent with findings of Lucas (2005): some individuals experience significant decline in SWB and do not return to their baselines, at least, within the time span under consideration (5 years). Our findings are in line with the conclusion of Bonnano *et al.* (2002) that the lack of a major reaction (i.e., the Stability profile) to a critical life event is a wide-spread reaction. It might appear surprising that for a large number of individuals we observe improvement in life satisfaction at the point of transition, which is assumed to be of negative valence. This might be due to the fact that in these analyses we use a formal divorce rather than actual separation of spouses. It is plausible that for a number of people, obtaining a formal divorce after a period of negotiations is a relief. It is also likely to be the case that the short-term divorce-related volatility is concealed by the crude measurements of SWB. In the SOEP survey, respondents are interviewed only once a year. Such data structure does not allow us to build an adaptation profile based on shorter time intervals (e.g., on a monthly basis). In the case of divorce, the precision of temporal localization is important, since with yearly measurements we underestimate the initial reaction (see Study 1).

The present findings provide support for the claim that inter-individual variability in divorce-related SWB dynamics reflects divorcees' differences in external and internal resources. In that regard, our analyses for divorce support the conclusions that Schindler and Pinquart (2007) drew for retirement, that is, that resource-rich individuals are less likely to experience changes in life satisfaction following a critical life event.

In our study, members of the 'Stability' class are younger, have higher income, are more likely to be female, are less likely to be unemployed, and more likely to have a new partner within three years after divorce. Being younger can signify better chances for remarriage and higher chances of being in better health (although the differences in

age between classes are not large). Obviously, having a new partner is an important source of successful coping with divorce, as has been shown in the previous studies (e.g., Aseltine & Kessler, 1993). Our findings on the gender differences also support the existing conclusions that divorce is associated with positive outcomes for women, but not for men (e.g., Costa *et al.*, 2000)

Financial strain, according to the divorce literature, is one of the major mediators of post-divorce suffering (e.g., Andress & Bröckel, 2007), because financial resources, previously pooled together, are now divided between two households. Our findings support this conclusion, as income and being employed appear to be resources with the biggest effect size of all.

Contrary to what we expected, presence of young (i.e., preschool age) children turned out not to be a risk factor; also not for women. Only in a separate analysis did the effect become marginally significant. The result, all in all, does not support the existing findings (e.g., Williams, 2006) that presence of young children hampers successful coping with divorce for women is somewhat in contrast with existing findings that show that having young children is a risk factor in coping with divorce for women (e.g., Williams, 2006). Our failure to replicate these findings might be due to several reasons. Firstly, in line with the principle of historical embeddedness of resources (Baltes *et al.*, 1999), it is the context that defines which resources gain importance for individuals. Thus, analyses conducted in different countries may lead to dissimilar findings. Secondly, the significance of one variable (i.e., presence of young children) depends on other covariates that are included in the model; different covariates structures yield results that are not the same. Finally, dissimilar methodological approaches lead to different conclusions.

Two classes in our sample fare less well on adaptation to divorce than the 'Stability' class. At the same time, for one class, 'Recovery', the effect of divorce is transi-

tory, while for the other, 'Chronic strain', it does not dissipate even five years after the event. Individuals in these two groups differ in two characteristics – age and number of roles undertaken. Members of the 'Recovery' class are younger and are more likely to have the optimal number of roles than members of the 'Chronic strain' group. The finding on the effect of age supports the existing empirical evidence (e.g., Wang & Amato, 2000) that shows poorer adjustment to divorce in older people. Age might affect the process of adjustment in a number of ways. Firstly, being younger makes it easier to form a new partnership. Secondly, as divorce has been becoming more accepted in the society in past decades, it is more likely that those who belong to younger generations perceive divorce in a less negative way.

Having an optimal number of roles (i.e., staying involved in a number of different life domains, but not being overloaded) makes it more likely for a person to recover rather than remain chronically stressed. Fulfilling roles besides being a spouse seems to be protective when it comes to dealing with divorce. This is in line with research in the area of self regulation and self-complexity (Linville, 1987, Staudinger *et al.*, 1999). On the other hand, being overloaded is, apparently, a factor of physical and psychological strain.

Limitations of the Study

Some limitations of the study should be mentioned. First of all, in some cases the *formal* aspect of a critical life event, such as the date of actually getting legally divorced, which is identified in the SOEP data set, is not necessarily the best marker in terms of divorce-related SWB dynamics. Formal divorce might be preceded by a rather long period of separation. At the point of the formal change in marital status the person may already possess a different set of resources (i.e., find another partner); mourning over the end of the marriage may be over as well. In this case, other time points in this

process, such as the start of separation, might add to our knowledge about the SWB dynamics related to divorce. However, we restricted the analysis to the formal status passage as usually is the case in the literature. The possibility to include the date of the informal transition would definitely enrich our insights into the adaptation process.

Another limitation is that the measure of life satisfaction was only available on a yearly basis. However, divorce is an event which is sensitive to temporal localization: dynamics of life satisfaction around the time of divorce (i.e., during the first year after experience) is characterized by high volatility of SWB (see the 1st study). Stronger effects on SWB were observed when using quarterly instead of yearly measurements.

Unfortunately, the information on external and, in particular, internal resources we had at hand was somewhat limited. Thus, we were not able to test all the resources that were theoretically relevant, such as personality traits or self-efficacy. Also, important characteristics of partners' interaction had to be left out; for example, we were not able to determine who among two partners filed for divorce, or whether ex-partner(s) already had formed a new relationship prior to the divorce.

Finally, there are selection issues to be considered. Divorce may have been a reason to drop out of the survey. In this study, we do not take into account that some individuals (usually those with low SWB) might have stopped participating in the SOEP after becoming divorced, which might have led to selection bias. It was not our aim to obtain results, representative for the whole nation, since we focused primarily on the resources that push individuals onto a certain trajectory rather than on determining the exact proportions of the classes. This feature of the analysis, however, should be kept in mind while drawing generalizing conclusions.

5 Conclusion and Next Research Steps

Controversial perception of divorce by society, as well as possible ambivalence in partners' attitude towards marital disruption, implies considerable inter-individual variability in reaction to divorce. Our study revealed that, indeed, divorce does not evoke a uniform response. We found support for both the hedonic treadmill model and the chronic strain model. We were also able to demonstrate that given currently available data, the lack of an observable SWB reaction is a wide-spread reaction. Unfortunately, large-scale longitudinal data sets do not allow studying internal resources and their potential protective value in more detail and also weigh them vis a vis the seemingly strong effect of economic resources (i.e., household income and being employed). We hope that in the future such measurements will be included and will therefore allow to paint a more complete picture of SWB regulation.

The majority of the existing literature on inter-individual differences in adaptation to events (including the present study) has been carried out in highly developed industrialized countries. Thus, it remains an open question, to which degree the findings represent universal reactions of people to a critical event. As the next step, we draw attention to the importance of *context*, thus, make an attempt to contribute to the understanding of the interplay between the macro- and micro-levels of societal functioning. Next study compares adaptation to divorce in two societies – West Germany and Russia.

IV. Adaptation to Divorce: Comparative Analysis of West Germany and Russia

This study analyzed data from two nationally representative longitudinal surveys (SOEP and RLMS) to reveal the differences between the overall impact of divorce on subjective well-being (SWB) in West Germany and Russia, typical patterns of pre- and post-divorce SWB dynamics in both countries, and predictive patterns of SWB dynamics. As expected, the anticipation effect of divorce on SWB was stronger in West Germany than in Russia. In each population, two distinct classes of individuals, following slightly different trajectories of SWB, were found; both cross-country similarities and differences were revealed with regard to predictors of class membership. Finally, the study showed that the socio-structural context (to some extent) determines which resources (internal and external) contribute to re-establishing SWB equilibrium after experiencing a divorce.

1 Introduction

Although marital dissolution is generally regarded as a negative event, the literature on adaptation to divorce yields controversial findings. It is often reported as detrimental to subjective well-being (SWB) in the short or even in the long run, but it can also have positive consequences. Adjustment to marital disruption largely depends on available protective resources, such as employment status, income, education (Amato, 2000), social support (Aseltine & Kessler, 1993; Wang & Amato, 2000), and risk factors, such as presence of young children (Williams, 2006), older age (Wang & Amato, 2000), and so on.

Although research on adaptation to divorce over the past few decades has provided us with some grasp on personal resources, less is known as to how the larger socio-economic and cultural context affects divorce-related SWB dynamics; the research mostly has focused on the impact of the societal context on such aspects of divorce behavior, as divorce rates (Kalmijn, 2007), economic consequences of marital disruption (Uunk, 2004), intergenerational transmission of divorce (Engelhardt *et al.*, 2002). In addition, almost all of the work on adaptation to important life events has been carried out using data from highly developed Western countries[55]. The current study aimed to contribute to the literature on adaptation to divorce in two ways: a) by comparing adaptation profiles in two countries – Germany and Russia (a society, where the economic and social context is very different to the one that prevails in the existing literature), and b) by comparing the relative influence of internal and external resources on the adaptation patterns. To reach these goals, first, we identify the overall effect of divorce on SWB in two populations. Next, we use latent growth mixture modeling to deconstruct the averaged trajectory of pre- and post-divorce life satisfaction dynamics. Finally, we analyze predictors of class membership using multinomial logistic regression and compare the two countries with regard to predictors of embarking onto a certain trajectory.

In order to develop hypotheses about possible differences in adaptation to divorce, we start with a brief review of impact of divorce on SWB; then, we describe macro-level predictors of divorce behavior and divorce-related changes in SWB; finally, we outline differences in Russian and German cultural and institutional settings.

[55] Primarily, with GSOEP, BHPS, and HILDA datasets

1.1 Divorce and SWB

SWB is defined as judging life positively and feeling good (Diener *et al.*, 1997). Three components of SWB – positive affect, negative affect, and life satisfaction – are often distinguished. In this study we use one component – life satisfaction, which is viewed as a cognitive-based evaluation of life, reflecting the gap between perceived reality and personal aspirations.

Divorce is a crucial life event which has the potential of affecting SWB in opposite ways. The literature reports both positive (e.g., Clark *et al.*, 2008) and negative (e.g., Lucas, 2005) consequences of divorce for SWB. Recent research has shown that individual reaction to marital dissolution largely depends on individual characteristics, such as age (Wang & Amato, 2000), gender (Andress & Bröckel, 2007), protective resources, such as socio-economic status (Wang & Amato, 2000), having a new partner (Aseltine & Kessler, 1993), social involvement (Berman & Turk, 1981), and risk factors, such as presence of young children (Williams, 2006). As regards importance of *context,* the literature mostly focuses on various aspects of partner's interaction; for example, it has been shown that pre-divorce marital quality (Kalmijn & Monden, 2006) and imbalance of power between partners (Kressel, 1980) play a role in adjustment to divorce.

1.2 Socioeconomic and cultural predictors of divorce behavior

The broad socio-economic and cultural context affects divorce behavior in a country. Important predictors of divorce rates are religiosity[56] (see Kalmijn, 2007 for review), gender-role specialization, and institutional setting.

[56] A country's religiosity is positively associated with marriage rates and negatively associated with divorce rates.

According to the economic theory of marriage (Becker, 1981), the stronger the economic position of a woman, the lower the benefits of specialization in marriage. Increase in women's labor market participation weakens marriage and positively affects the probability of divorce, because women's employment lowers the costs for leaving an unhappy marriage (Kalmijn, 2007).

The institutional setting may affect divorce behavior via several dimensions, such as welfare provision, divorce legislation, and strength of economic and social institutions. Easiness of getting a divorce is a strong positive factor of divorce rate (see Kalmijn, 2007, for a review). The effect of welfare provision is twofold. First, generous welfare support has a protective effect, since it lessens certain consequences of divorce, such as economic post-divorce strain for women (Uunk, 2004). Second, an argument has been made that a strong welfare state weakens the importance of informal networks. Critiques of the welfare state (e.g., Etzioni, 1995) proposed the so-called 'crowding out' hypothesis; according to which rich welfare benefits and programs of social support 'crowd out' informal ties and personal networks, as individuals have alternative sources of support (e.g., the state) to rely on. Although the empirical data is rather contradictory[57], connectedness of transitions into and out of marriage with availability of welfare benefits has been documented (e.g., Bitler *et al.*, 2004). In consistency with classical utility-maximizing model of marriage, increase in welfare benefits raises utility in the unmarried relative to the married state, consequently increasing divorce rates.

Going through a socio-economic transition (crisis) is often accompanied by a weakening of social and economic institutions, and may have differently directed conse-

[57] There exists a contrary opinion; opponents of the 'crowding out' hypothesis argue that the welfare state contributes to development of personal social capital by setting grounds for solidarity and providing people with resources (e.g. time, money), which they could invest in development of networks, etc. Some empirical support to this view has been found (e.g. Motel-Klingebiel *et al.*, 2005).

quences on divorce behavior. On the one hand, there are several byproducts of transition that may increase divorce rates, such as anomie and uncertainty. Anomie leads to a decline in social control, weakening of social norms, increase in substance abuse (Kalmijn, 2007), which risk marriage. Uncertainty, at the same time, makes long-term commitments, such as getting married or having children, unattractive (Kohler & Kohler, 2002). Indeed, there is empirical evidence, which suggests that transition countries face a decline in marriage rates and an increase in divorce rates (Gerber & Berman, 2010). On the other hand, general financial hardship makes one's economic prospects uncertain; individuals without good economic prospects have low value on the marriage market (Sweeney, 2002). Therefore, one could argue that low chances for remarriage will decrease the probability of leaving an existing union. Also, in times of hardship, the importance of social ties may be elevated, in line with the aforementioned 'crowding out' hypothesis, which would also lead to decrease in divorce rates.

Besides the direct effect on divorce behavior, contextual features may also determine which personal characteristics are crucial for the adaptation to divorce. According to lifespan theory, both socio-structural and psychological characteristics might "show different effects depending on the larger cultural context in which they are embedded" (Baltes *et al.*, 1998). Social support, for example, may be more salient in a society with weak welfare provision; income might be more significant in a transitional economy compared to a highly-developed country (Delhey, 2010), etc.

Divorce setting and actual divorce behavior in a country influences the process of adaptation to this event in two ways. First, the pervasiveness of an event in a society, reflected in the rates of this event, has consequences for the adaptation trajectory. The effect of pervasiveness has been found for unemployment in the UK (Clark, 2003) and Germany (Clark *et al.*, 2010): the negative effect of becoming unemployed on SWB is stronger in regions with lower unemployment rates. The same argument may be true for

divorce. Second, divorce setting changes the meaning of protective resources and risk factors in a given society. For example, in a weak welfare state economic consequences of divorce may be more severe than in a society with strong welfare protection; since economic consequences of marital dissolution is an important moderator of adaptation to divorce (e.g., Wang, 2000), personal financial well-being may be a more important coping resource in a country with weak welfare protection.

1.3 General Socio-Structural Context in Germany and Russia

Russia and Germany are characterized by large dissimilarities in general context, as well as in divorce settings. Since 1985 Russia has been undergoing political and economic transition. Economic transition denotes the shift from a centrally planned system to a market economy, while political transition signifies replacement of the authoritarian regime by a more participatory society. More precisely, it means liberalization of prices and trade, privatization of enterprises, development of the banking sector, integration into the global economy, reform of the pension system, health care and the education sector (EBRD Transition Report, 2004). Societal consequences of transition include severe civil conflicts, social stress (Easterlin, 2009), and the deterioration of public goods (Guriev & Zhuravskaya, 2009). On the individual level, transition often translates into inadequacy of human capital accumulated during the former period (i.e., the Soviet times), income volatility (Guriev & Zhuravskaya, 2009), high degree of uncertainty about the future, and growth in inequalities. Despite having an onset of economic growth, after having overcome the initial fall, large discrepancies in terms of economic

affluence, strength of state and social institutions[58], and degree of political stability persisted between Russia and Germany throughout the period of our interest (1994-2007).

Gender-role specialization has been lower in Russia than in West Germany. Since the 1960s, the labor market in Russia has been characterized by a comparable degree of involvement of both genders (Roshchin & Zubarevich, 2005). Women stay active on the labor market throughout their life time, often continuing to work after having reached the legal retirement age[59]. Between 2000-2007, the average labor market participation rate for women from 15 to 55 was 74.6 % in Russia (Source: Federal State Statistics Service). In Germany, throughout the years 1992-2007 the share of economically active women aged between 15 and 64 years was 63.9 % on average (Source: Eurostat); it has been steadily increasing, though: from 61% in 1992 to 70.1% in 2007.

Differences in general socio-economic contexts in the two countries may produce differences in both divorce behavior and adaptation to divorce. On the one hand, lower gender-role specialization in Russia possibly a) increases the rate of divorce (Kalmijn, 2007) and b) lessens the economic consequences of divorce for women, thus, making it easier to cope with divorce. Overall economic volatility in Russia, in comparison to West Germany, may have a positive (e.g., Kalmijn, 2007) impact on the divorce rate, but slow down the speed of adaptation to marital dissolution, due to weak institutions and welfare protection (e.g., Uunk, 2004). At the same time, instability in social norms in Russia, due to overall transitional anomie, may both increase the rate of divorce (Kalmijn, 2007) and lessen the impact of divorce on SWB, due to low stigmatization of marital disruption.

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[58] Improvement in the quality and efficiency of state institutions has been identified as a primary challenge for Russia by EBRD report, 2004.

[59] The legal age of retirement in Russia is different for men (60 years) and women (55 years).

1.4 Divorce in West Germany and Russia

Throughout post-WWII history, the divorce rate in Russia has been among the highest in the world. The average crude divorce rate[60] in 1991 – 2009 was 2.2 in Germany (ranging from 1.7 to 2.6) and 4.5 in Russia (ranging from 3.7 to 5.9). At the same time, there have been regional differences in the rates of divorce between East and West Germany. Historically, divorce rates were higher in East Germany until Reunification, when they dropped and since have never reached the level of the former FRG. This drop has been explained by the adoption of western divorce regulations in East Germany (Engelhardt *et al.*, 2002). The average crude divorce rate in the former FRG in 1991 – 2009 is 2.4, in former East Germany – 1.9[61].

Large differences in frequency of divorce can be attributed to a number of institutional regulations, as well as to the degree of gender-role specialization. In West Germany, according to Engelhardt *et al.* (2002), "social and family policies were dominated by the traditional male breadwinner model" (p. 299) with continuous employment of men and partial employment of women, which led to financial dependence of wives on their husbands and, possibly, to higher post-divorce financial strain, compared to countries where family policy aimed at financial independence of women (e.g., East Germany or Russia). Divorce has been rather expensive and required meeting certain conditions (e.g., 1 year separation as a ground to divorce). Women have been entitled to post-divorce alimony. In 1949-1990 family policy greatly differed in West and East Germany. An argument has been made (Engelhardt *et al.*, 2002) that in East Germany, due to low costs, shorter waiting time and simplicity of divorce legislation, divorce should be "less stigmatizing and stress-producing" (p. 300), in comparison with West Germany.

[60] Number of divorces per 1,000 inhabitants
[61] Data source for Germany: the Federal Bureau of Statistics. Data sources for Russia: United Nations Statistic Division.

We assume that these factors, as well as regional differences in divorce rates may moderate the effect of the event on SWB. Therefore, in our analyses we limit the sample to the former FRG, in order to avoid mixture of contextual features.

In transitional and contemporary Russia, the social and institutional structure makes divorce easier (Mills, 2004). Continuous employment of women, individual taxation, and absence of post-divorce alimony for the former spouse[62] weakened marriage as an economic institution. Liberal (since 1965) divorce legislation makes divorce a quick and rather cheap procedure, especially for couples without children. High rate of divorce, low religiosity of Russian society, and weakening (as a result of general anomie) of societal norms may lead to low stigmatization of divorce. At the same time, Soviet society and transitional Russia were characterized by a high reliance on informal networks. As Rose (2001) points out, organizational failure fostered the formation of horizontal informal networks that helped to cope with bureaucratic uncertainty and mistrust in institutions. As personal networks gain importance, individuals seek ways to expand them (e.g., expand family ties through marriage). Therefore, the high socio-economic volatility resulting from transition might motivate individuals to pool resources, and keep a marriage intact. Moreover, a strong cultural norm of being married still persists in Russia. Although marriage rates in Russia have been declining over past decades, 'early and near universal' onset of marriage has been the social norm in post-War times (along with low acceptance of singlehood); this traditional norm was reinforced by Soviet housing policies, importance of family networks for gaining access to goods and services, and personal need for sanctuary from the state (Gerber & Berman, 2010).

Table 9 summarizes structural (i.e., related to institutional setting) and ideational (i.e., related to societal norms) factors which may make divorce in Russia easier

[62] Post-divorce alimony was only available in a limited number of cases, such as disability of the former spouse.

or harder to cope with (in comparison to West Germany), and, therefore, determine cross-country differences in SWB changes, related to divorce.

Table 9. Structural and Ideational Characteristics of Divorce in Russia

	Possibly lessen the effect of divorce on SWB	Possibly aggravate the effect of divorce on SWB
Structural	- liberal divorce legislation - higher rates of women's participation in the labor market	- weak welfare state
Ideational	- high normativity / low stigmatization of divorce - weakening of social norm due to transitional anomie	- strong cultural norm of being married

To sum up, contextual features, such as low stigmatization of divorce and liberal divorce legislation, can be expected to lessen the impact of divorce on SWB in Russia. At the same time, weak welfare support, general high socio-economic volatility of the transition period, and persistence of cultural norm to marry may aggravate the impact of divorce.

Transitional and contemporary Russia has been a less structured and less predictable society than West Germany. Thus, in line with the aforementioned argument that salience of personal resources depends on the context, one could expect that it would be adaptive to have more different resources available that could help to cope with divorce. Therefore, a larger number of significant predictors of adaptation trajectory is expected to be found in Russia. Moreover, we expect certain resources to be relevant in Germany, but not in Russia, and the other way around.

1.5 The Current Study

There is growing evidence that the socio-economic and cultural context has an effect on actual divorce behaviors of individuals (e.g., Kalmijn, 2007; Uunk, 2004). Less

is known, however, about how the broad context influences the process of SWB regulation triggered by this challenging event. In this explorative study we focus on two aspects of adaptation to divorce, namely, the overall long-term effect of divorce on SWB, and cultural constancy of the internal and external resources which influence adaptation profiles. We argue that a) the average impact of marital dissolution can be milder or more severe, depending on structural and ideational settings, b) the structure of personal resources / risk factors which determine embarking onto a certain trajectory of adaptation is society-specific rather than universal and c) regardless of differences in predictors of class membership, in both societies resource-rich individuals achieve a more positive adaptation outcome (i.e., remain on higher levels of SWB before and after a divorce).

Hypotheses:

Ia. Divorce leads to a lower impact on SWB in Russia due to low stigmatization, liberal divorce legislation, and low gender-role specialization.

Ib. Divorce leads to a higher impact on SWB in Russia due to weak welfare support and the strong cultural norm of being married.

II. The functionality of resources is context-dependent. The impact of resources (internal and external) on achieving the positive outcomes for SWB is higher in Russia than in Germany.

2 Method

2.1 Sample

The present study uses data from two large-scale longitudinal databases – the German Socio-Economic Panel (SOEP) and Russian Longitudinal Monitoring Survey (RLMS). The SOEP is a longitudinal nationally representative survey of persons and households, which started in the FRG in 1984 (Haisken-DeNew & Frick, 2003). In this

study, we focused on the subsample of respondents from West Germany who reported becoming divorced between 1991 and 2008 and provided evaluation of their life satisfaction at the time of divorce. The subsample of divorcees consists of 508 individuals.

The Russian Longitudinal Monitoring Survey[63] (RLMS) is a household-based survey designed to investigate the effects of reforms in Russia on the economic well-being of individuals, particularly with respect to their consumption patterns and health. RLMS runs since 1994, two years – 1997 and 1999 – are missing. The survey covers around 4,500 Russian households (with a household response rate of over 80%). We here refer to twelve waves (1994 – 2007) of RLMS data. Our analysis sample consists of individuals who reported getting divorced between 1994 and 2007. The total number is 833.

In both samples, we retain the data of participants who remarried within the next five years after divorce. For each individual, the time span of eleven years was analyzed; this time span encompassed five years prior to divorce, five years after divorce, and the year of the event itself. The data were unbalanced; this means that not every respondent has all eleven observations. In the GSOEP data, 111 respondents (21.8%) had all eleven measurements of life satisfaction, with the mean number of observations per person equal 7.9. In the RLMS data, none of the participants provided eleven reports on life satisfaction; the mean number of observations is 5.5. Absence of respondents with the full data is due to the missing waves in the RLMS data.

The data in these analyses are not weighted. This might lead to some sample selectivity, because divorce can be a factor of panel drop out, for example, due to relocation. If a person drops out, we are likely to miss his / her report on life satisfaction already at the first post-divorce measurement (y[0]). As our subsamples consist only of people who report their life satisfaction at y[0], dropouts are not taken into account. To

[63] A full description of the RLMS survey is available at: http://www.cpc.unc.edu/projects/rlms/.

tackle the issue of sample selectivity related to dropouts, we employ the following strategy. Dropouts are identified via their former partners (i.e., the partner reports getting divorced and is in the sample, but the person he/she had been married to, is missing) and then compared to those who stay in the sample against a number of characteristics – age, gender, employment status, income. In the SOEP data, we did not identify any significant differences between respondents who (temporary) terminate their participation in the survey and those who stay. In the RLMS data, men are more likely to drop out; this might be due to non-effective following up after the relocation. Moreover, men who drop out, are younger than those who stay in the panel ($t = 2.73$, $p < 0.05$).

2.2 Measures

Life satisfaction. As a proxy measure of the reaction to an event, we use one principal dependent variable – life satisfaction. In the SOEP data, it is measured with item "How satisfied are you with your life, all things considered?" Responses are distributed on an 11-point scale (0-10), where 0 corresponds to 'Completely dissatisfied' and 10 mean 'Completely satisfied'. In the RLMS data, it is measured with the item "*To what extent are you satisfied with your life in general at the present time*"? Replies were coded from 1 to 5, where 1 corresponded to 'Fully satisfied' and 5 corresponded to 'Not at all satisfied', with all of the intervening values being labeled appropriately.

Predictors of Class Membership

At the 2nd stage of the analysis (see description of the Analytical technique below), several predictors of class membership were tested for their significance with multinomial logistic regression. While forming the list of potential predictors, we relied on the literature on coping with divorce, which has to date accumulated some knowledge on the moderators of the process of adjustment. Following Staudinger and colleagues (2005), we divide all moderators (i.e., resources) into two groups – internal and exter-

nal. Structural personality characteristics, regulatory processes, physical conditions, age and gender belong to the group of internal resources, while the cluster of external resources is formed by socio-economic characteristics and social support.

Internal Resources

Age was included as a continuous variable, which measured age at the time of divorce. *Gender* was coded '1' if the respondent was female, '0' – if male. Measures of *control beliefs* also differed in two datasets. In the SOEP, items measuring control beliefs, are available in five waves (1994, 1995, 1996, 1999, 2005). Two problems – missing waves and non-identical measures – are encountered while using this indicator[64]. To overcome these difficulties, we z-standardized total scores, averaged them across all available observations, and imputed the mean score in missing waves. Higher scores indicate higher inclination to internal control beliefs. Four waves of the RLMS data (2002, 2003, 2004, and 2005) contain Pearlin Mastery Scale – a 7-item scale, which measures to which extent individuals perceive themselves in control of their lives. The scale offers four response categories, ranging from 1 – "strongly disagree" to 4 – "strongly agree". The total score is the sum of the responses to each item (range from 7 to 28 is possible). Higher scores indicate higher inclination to internal control beliefs. The scores were averaged across all waves. The scale reliability coefficient α (calculated on the whole sample, N = 6740) is 0.47.

[64] Items are identical in the years 1994, 1995, 1996, and in 1999 and 2005. Items in the year 2005 include: "How my life goes depends on me", "Compared to other people, I have not achieve what I deserve"*, "What a person achieves in life is above all a question of fate or luck"*, "If a person is socially or politically active, he/she can have an effect on social conditions", "I frequently have the experience that other people have a controlling influence over my life"*, "One has to work hard in order to succeed", "If I run up against difficulties in life, I often doubt my own abilities"*, "The opportunities that I have in life are determined by the social conditions"*, "Inborn abilities are more important than any efforts one can make"*, and "I have little control over the things that happen in my life"*. Items for the year 1996 include: "I determine what happens to me in life", "It is useless to make plans because they seldom work out"*, "My behavior determines my life", "No one can escape their fate, everything in life happens as it must happen"*, "If I get something I want then it's mostly due to luck"*, "Most plans I make are successful", "There is little sense in planning ahead because something unexpected always comes up"*, and "Things always happen differently, one can't rely on anything"*. Responses to a few items marked with * were inverted, so that the higher value indicates internal control.

External resources

Number of years of education indicates the number of completed years in education at the time of divorce. For income measurement we use annual household post-tax income, adjusted for the number of household members. *Household post-government income* represents the total family income (including revenues from labor earnings, asset flows, retirement and social security pensions, private and public transfers), after taxes. The data were taken from the Cross National Equivalence File. A log function was applied to the adjusted post-governmental household income, because the distribution was positively skewed; also, the variable was centered. Assuming that considering financial well-being only at the time of divorce might be confounded by temporal fluctuations in income, we averaged income values across five years prior to divorce to obtain more robust estimations. *Labor force status* is identified as either employed (full-time or part-time), or unemployed (identified as being not employed and officially registered as unemployed). *Having a new partner* was measured by a binary indicator – whether or not the respondent has formed a new intimate relationship within three years following divorce (remarried or cohabiting). The variable *small children* is coded '1' if the respondent has children of preschool age (below 7 years), '0' – if the respondent has no young children. We did not take into account the number of young children. In our analyses we also included an interaction between gender and presence of young children. Measures of *physical health* slightly differed in two datasets. In the SOEP data, two indicators were used – annual number of stays in hospital and annual number of doctor visits; in the RLMS data, reporting having problems with health within 30 days prior to the interview (binary item) and number of stays in hospital within three months prior to the interview were used. The measures were z-standardized and averaged. Applying the same reasoning as in case of income, we averaged health scores across five years prior to divorce. Higher scores indicate more health problems.

2.3 Analytical Strategy

The analysis comprised three phases. The goal of the 1st stage was to outline overall (averaged) trajectories of adaptation to divorce in the two countries of interest. The 2nd stage aimed at identifying latent classes of individuals, who follow different trajectories of adaptation. Finally, at the 3rd stage, we identified predictors of class membership in two samples and compared countries with regard to relevance of resources. To address the task of the 1st stage, we applied a method which allowed us to both take into account the unobserved heterogeneity and estimate the effect of time-invariant variables (such as gender), namely, the Mundlak model (described in detail in the Chapter II). The time span under consideration encompassed 11 years, including 5 years before the event, 5 years after, and the year of divorce itself. The time elapsed since the change of status is picked via a series of dummy variables. That is, divorce was coded as being of less than 1 year's duration if current marital status at time t is 'divorced' and marital status one year previously was 'married'. Equally, divorce was coded as being of 1 to 2 years' duration if both current marital status and marital status at the previous interview were 'divorced', whereas marital status two years before the current interview was 'married'. Longer durations were coded analogously. To model anticipatory stage of adaptation, we introduced five dummies which referred to the future divorce: if a person was to divorce at time t, the 'divorce dummy' at t-1 was coded '1', dummy at t-2 was coded '1', and so on. A rather large number of controls (gender, age, education, employment status, number of children, income, health dysfunction, and year of survey) is employed, because the purpose of this analysis is to level off inter-individual differences between people as much as possible, in order to estimate the effect of divorce as if everyone within the society were the same with regard to certain important characteristics.

In the 2nd stage of analysis, we used latent growth mixture modeling, LGMM (Muthen & Muthen 2000). This modeling strategy tests whether the sample consists of distinct classes of individuals with different growth trajectories. Missing data was handled with the Full Information Maximum Likelihood (FIML) estimation procedure, which allowed keeping cases with missing values on some measurement occasions instead of dropping them or imputing data.

Following the procedure offered by Schindler & Pinquart (2007), at the first step we specified a univariate latent difference score model (McArdle & Hamagami, 2003), which is basically an extension of the latent growth model. Figure 4 illustrates the path diagram of the latent growth mixture model[65]. Specification of the model went through several stages. As a first step, we specified a model with only two growth factors – intercept (i.e., level of life satisfaction right after divorce), and a linear slope. Then, we tested whether inclusion of quadratic slope improved the model fit (as it did not, quadratic slope was not retained in the final model). To model divorce-related short-term changes in life satisfaction, two additional growth factors were included – 'Pre' and 'Post'. Growth factor 'Pre' estimates the mean change in life satisfaction between one year before divorce and the first measurement after divorce (which could happen in 1-12 months); growth factor 'Post' estimates the mean change between the first and the second measurements after divorce (the time span could hypothetically encompass from 12 to 24 months). In our analyses, variances of all observed (Y) and latent variables (y), as well as variances of change scores (Δy) were fixed at zero. The categorical latent class variable C shows that for all four growth factors means and variances are allowed to vary across classes. All residuals (σ) were set to be equal. The intercept and the slope were allowed to correlate.

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[65] The latent difference score model used in this study is the same as that used in the 2nd study. For the reader's convenience, we repeat the diagram here.

The next step in the model building was class enumeration. Therefore, after having established the final numbers of growth factors in a one-class model, each sample was tested for models with 1 to 4 classes. Several usual likelihood-based indices were used to compare the models in order to find the most plausible solution: Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and sample-size adjusted BIC (SSBIC). Lower values indicate better fit. Another measure, entropy, was used to estimate the accuracy of placing individuals in classes; entropy can take any value from zero to one, with higher values indicating better fit. Furthermore, two tests, which formally compare a K-class model and (K-1)-class model, were employed – the Vuong-Lo-Mendel-Rubin test (Muthen, 2003) and the parametric bootstrapped LRT (BLRT, Nylund, Asparouhov, & Muthen, 2007). A statistically significant p-value suggests that the K-class model should be favored.

The next step, after fitting an unconditional growth model, was to include several predictors of differences in the change process. The list of antecedents included gender, age, and income. In this analysis we estimated the indirect effect of the covariates, that is, they were allowed to predict only latent class variable.

At the 3rd stage of analysis, we ran multinomial logistic regressions with the following independent variables, representing the internal and external resources: gender, age at divorce, household income per capita, education, employment status, health dysfunction, control beliefs, presence of children of pre-school age, and presence of new partner. In Model 2 we also introduce the interaction term between young children and gender (being a female).

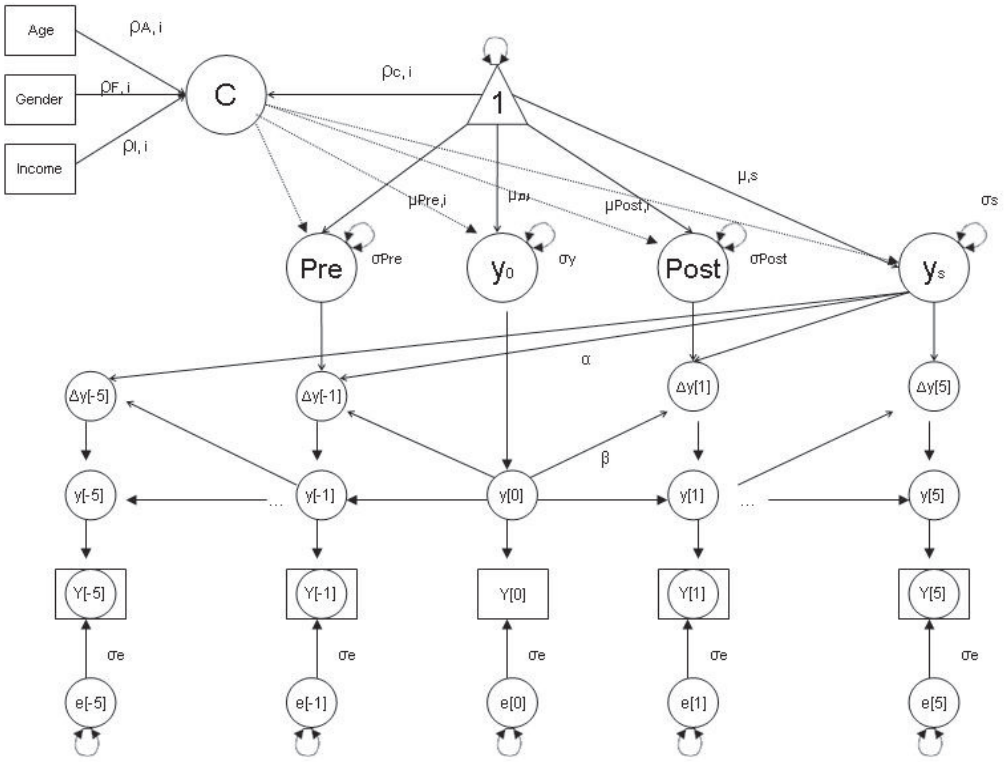

Figure 5. Latent Growth Mixture Model for Changes in Life Satisfaction Prior and After Divorce

y_0 – intercept, y_s – linear slope, C – categorical latent class variable, Pre – mean change in life satisfaction between one year before divorce and the first measurement after divorce, Post - mean change between the first and the second measurements after divorce. All paths depicted with solid lines are fixed at 1. Each observed score Y[t] into true latent score y[t] and error component e[t]. Latent changes are defined as accumulation of the first differences among latent variables (McArdle & Hamagami 2010), and the overall trajectory incorporates accumulation of the latent changes Δy[t] up to the time t ($Y[t]_n = y_{0,n} + (\sum_{i=1,t} \Delta y[i]_n) + u[t]_n$). This model incorporates *dual change score*, because it allows to estimate two types of changes: systematic constant change (α) and systematic proportional change β.

Since we analyzed the two country samples separately, we are not able to perform formal tests to compare coefficients obtained for Russia and West Germany. Therefore, we mostly rely on the number of significant predictors and estimations of effect size of the full model. In logistic regression, there is no measure with the same interpretation as R^2 in OLS, however, several measures are assumed to be analogous. To estimate the effect size for two models, we employed two indices of goodness-of-fit. The first one is McFadden's R^2, which is a measure based on ratio of log-likelihood of

the full model and the log-likelihood of the intercept-only model. The second measure is Cox-Snell R^2, which is also based on log-likelihoods, but accounts for the sample size (Tabachnick & Fidell, 2007).

3 Results

The Overall Impact of Divorce in West Germany and Russia

All in all, in both countries divorced individuals are less satisfied with their lives than the married ones. In West Germany, the average life satisfaction of married respondents is 7.19 on the 0-10 scale; the mean level of life satisfaction of divorced individuals is 6.56 (t = -28.02, p = 0.000). In Russia, married persons report, on average, 2.70 on a 1-5 scale, whereas divorcees are somewhat lower in SWB, around 2.39 (t = -20.9, p = 0.000). Thus, the simple comparison of the two groups confirms the usual finding of numerous cross-sectional studies: married individuals are better off in terms of life satisfaction.

In these analyses we deal with two different life satisfaction scales. This creates certain problems if we want to visually compare the coefficients across samples, since, in order to do so, we need to bring both scales to the same number of response categories. Three strategies are possible: to 'stretch' the shorter (RLMS) scale, or to reduce the number of response categories in the longer (SOEP) scale, and to perform the z-transformation. To do what is described in the literature as 'linear stretching', we simply assumed that the first and the last categories in both samples are equal to each other[66], and bring the remaining categories in linear correspondence[67]. To reduce the number of categories in the longer scale, we merged the response categories in the

[66] '0' in the SOEP sample is equal to '1' in the RLMS sample, '11' in the SOEP sample is equal to '5' in the RLMS sample.
[67] So that '5' in the SOEP sample is equal to '3' in the RLMS sample, '2' in the RLMS sample is equal to '2.5' in the SOEP, and '4' in the RLMS is equal to '7.5' in the SOEP.

SOEP data in the following way: '0-2' is equalized to '1' in the RLMS data, '3-4' corresponds to '2', '5-6' is equal to '3', '7-8' is equal to '4', and '9-10' are equal to '5'. Analyses with all three strategies yielded virtually the same results. In the end, we combined z-transformation with reduction of the number of categories in the German scale, in order to make the results more comparable. For reasons of brevity, we present here only results obtained with this strategy.

The analysis with the Mundlak model showed that in West Germany the overall effect of divorce seems to be stronger than in Russia (results are presented in Table 10). This is especially true for the anticipation stage. In West Germany divorcees, on average, expose strong anticipation effects (i.e., life satisfaction decreases already a few years before the divorce), whereas in Russia the effect of divorce is only marginally significant one year prior to marital disruption. The immediate reaction to divorce, however, is not significant in West Germany, but marginally significant in Russia. In West Germany there is no long-term effect of divorce (life satisfaction never falls significantly below the baseline); interestingly, in Russia, being divorced for 5 or more years significantly decreases life satisfaction.

Number of Classes and Description of Classes

Values of AIC, BIC, sample-size adjusted BIC (SSBIC), entropy, LRT and BLRT for unconditional models are presented in Table 11. For the Russian sample, we choose the 2-class solution: although values of AIC and SSBIC slightly decrease in 3- and 4-class solutions (while entropy slightly increases), the changes are marginal; at the same time, LRT is not significant in 3-class solution, suggesting no improvement compared to the 2-class model.

Table 10. Anticipation and Adaptation to Divorce. The Mundlak Models for Russia and Germany

	Russia	Germany
Anticipation stage		
4-5 years hence	-0.084	-0.163
	(0.044)	(0.045)
3-4 years hence	-0.099	-0.192***
	(0.046)	(0.049)
2-3 years hence	-0.084	-0.283***
	(0.043)	(0.048)
1-2 years hence	-0.063	-0.227***
	(0.042)	(0.051)
Within 1 year	-0.161**	-0.227***
	(0.039)	(0.055)
Adaptation stage		
0-1 years	-0.192*	-0.029
	(0.142)	(0.087))
1-2 years	-0.143	-0.054
	(0.147)	(0.092)
2-3 years	-0.168	0.020
	(0.166)	(0.093)
3-4 years	-0.192	0.043
	(0.142)	(0.094)
4-5 years	-0.227	0.039
	(0.162)	(0.100)
5 or more years	-0.214*	0.015
	(0.147)	(0.078)

Note. ***significant at 0.01 **significant at 0.05 *significant at 0.1. Standard errors in parentheses.

Table 11. Indices of Goodness of Fit for 1-to-4 Class Unconditional Models, West Germany and Russia

	1 class		2 classes		3 classes		4 classes	
	Germany	Russia	Germany	Russia	Germany	Russia	Germany	Russia
AIC	14441.420	12981.189	14340.776	12856.149	14352.184	12839.074	14288.230	12996.638
BIC	14504.877	13052.064	14476.152	13007.350	14508.712	13013.901	14465.910	13315.090
SSBIC	14457.265	13004.429	14374.580	12905.729	14391.269	12896.401	14332.597	13181.712
Entropy	--	--	0.844	0.743	0.769	0.777	0.793	1.000
LRT p value	--	--	0.000	0.000	0.098	0.240	0.550	0.146
BLRT p value	--	--	0.000	0.000	0.000	0.000	0.000	0.000

In the West German sample, the findings suggest that the differences between 2- and 3-class solutions are rather marginal: on the one hand, LRT is marginally significant in the 3-class solution, which could be an argument for selecting the 3-class model; on the other hand, AIC, BIC, and SSBIC values are the lowest among four solutions, while the entropy value is the highest one. Nevertheless, for the further interpretation we selected the 2-class solution as the one with better fit according to likelihood-based criteria. Moreover, to obtain a better understanding of which solution makes more sense, we ran multinomial logistic regression with the 3-class solution. The values of goodness-of-fit indices and the results of multinomial logistic regression are presented in the Appendix (Tables 6 and 7, Figure 1). The 3-class solution, by and large, replicates the one obtained in the 2nd study, with one exception: members of the Chronic Strain class experience decrease in SWB not right after the divorce (as we saw in the 2nd study), but with a 1 year delay. Results of the multinomial logistic regression of the 3-class solution revealed practically no differences between Chronic Strain and Recovery classes in terms of available resources[68]. This was an additional reason to select the 2-class structure for the further analysis.

The findings show that both populations consist of distinct groups of individuals with different growth trajectories. Tables 12 and 13 present estimates of growth parameters for the selected models. Figure 6 and Figure 7 show latent trajectories of pre- and post-divorce SWB dynamics in West Germany and Russia. Analysis of the SOEP data revealed two distinct classes of people who follow different patterns of SWB – 'overall stability with a temporary relief' and 'anticipatory decline and recovery'. Groups are very different in size. The majority of the sample (90,2 %, N = 467) follows the pattern of stability, with a short-term increase in SWB around the time of divorce (μ_{Pre} = 0.646, μ_{Post} =

[68] With one exception: members of the Recovery class are more likely to have the optimal number of roles than the members of the Chronic Strain class: Exp (B) = 0.27, p = 0.06. However, the significance of this result is marginal, while the group size of the Recovery class is rather small (N = 29).

-0.440). The overall trajectory of life satisfaction in this group is somewhat declining, although the significance of the slope is marginal (y_s = -0.153, p = 0.057). The second class (9,8 %, N = 41) experiences a large drop (μ_{Pre} = -1.613, μ_{Post} = 1.889), preceded by few years of anticipation, and followed by rapid and complete recovery. For individuals from this group, divorce appears to be a solution for an unhappy marital union.

Analysis of the Russian sample also revealed two distinct classes; 'overall stability with a temporary relief' (43%, N = 358) and 'overall increase with a temporary drop' (57%, N = 475). In both classes, life satisfaction changes only at the point of divorce itself, and rapidly returns back to the pre-event level. The change in SWB around divorce is significant in both classes (μ_{Pre} = 0.666, μ_{Post} = -0.399; μ_{Pre} = -0.562, μ_{Post} = 0.611, respectively). Despite the negative effect of divorce, the overall trajectory of life satisfaction in the 'temporary drop' class is upward (y_s = 0.138, p = 0.029), whereas in the smaller class ('temporary relief') life satisfaction remained stable throughout 11 years (y_s = -0.130, p = 0.120).

Table 12. Growth Factor Parameter Estimates, Conditional Model, West Germany

Parameter	Estimate[69]	S.E.	p value
Class 1 (N = 467)			
Intercept	7.048	0.240	0.000
Slope	-0.153	0.080	0.057
Pre	0.646	0.105	0.000
Post	-0.440	0.123	0.000
Class 2 (N = 41)			
Intercept	3.360	0.885	0.002
Slope	0.109	0.140	0.439
Pre	-1.613	1.311	0.038
Post	1.889	0.888	0.013

[69] The mean value of the dependent variable - Life Satisfaction

Table 13. Growth Factor Parameter Estimates, Conditional Model, Russia

Parameter	Estimate[70]	S.E.	p value
Class 1 (N = 475)			
Intercept	1.721	0.094	0.000
Slope	0.138	0.063	0.029
Pre	-0.562	0.069	0.000
Post	0.611	0.078	0.000
Class 2 (N = 358)			
Intercept	3.585	0.095	0.000
Slope	0.135	0.084	0.106
Pre	0.698	0.111	0.000
Post	-0.416	0.101	0.000

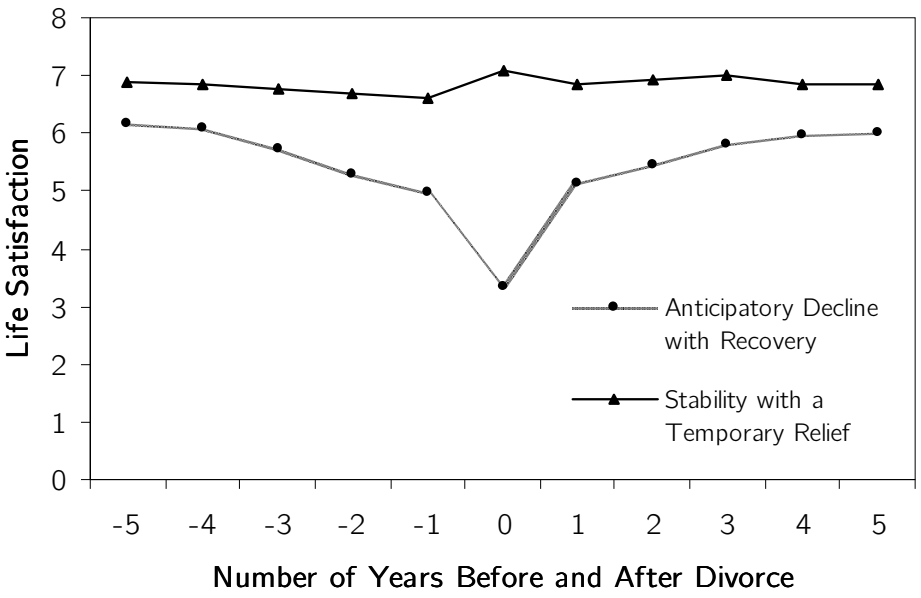

Figure 6. SWB Dynamics Before and After Divorce: Latent Trajectories (Conditional Model with Covariates), West Germany

[70] The mean value of the dependent variable - Life Satisfaction

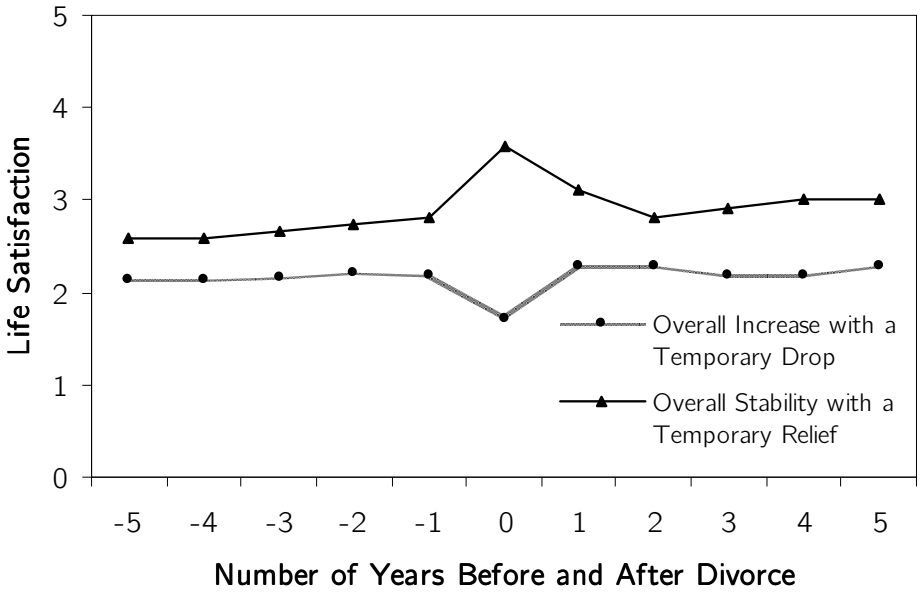

Figure 7. SWB Dynamics Before and After Divorce: Latent Trajectories (Conditional Model with Covariates), Russia

Predictors of Class Membership

The results for the German sample are presented in Table 14. In West Germany, among predictors included in the model, age, control beliefs, income, and presence of young children turned out to be insignificant. The larger class, 'overall stability with a temporary relief' was treated as the reference group in this analysis. In comparison with this group, the members of the smaller class, 'anticipatory decline and recovery' are in poorer health, have less years of education, are more likely to be unemployed, and are less likely to have a new partner shortly after getting divorced. Indices of goodness of fit have rather low values in the first model (without the interaction term): McFadden R^2 is equal to 0.007, Cox-Snell R^2 is equal to 0.004; in the second model they increase: McFadden R^2 = 0.07, Cox-Snell R^2 = 0.05.

Table 14. Predictors of Class Membership (Results from Multinomial Logistic Regression), West Germany

Predictor	Model 1			Model 2
	Class 1 (Anticipatory Decline with a Recovery)		Class 2 (Stability with a Temporary Relief)	Class 1 (Anticipatory Decline with a Recovery)
	Mean[†]	Exp (B)	Mean	Exp (B)
Internal resources				
Age at divorce	40.0	1.01	39.2	1.01
Gender (female)	43.4	0.61	56.0	0.69
Internal control (z scores)	-0.03	0.79	0.06	0.79
Health dysfunction (z scores)	0.38	1.21*	0.03	1.22**
External resources				
Education	11.0	0.86**	10.2	0.86**
Income	9.23	1.02	9.22	1.02
Unemployed	12.5	2.16*	6.2	2.14*
New partner	37.8	0.43**	58.3	0.40**
Presence of small children	27.0	1.04	26.2	1.10
Gender*kids	17.8		18.9	0.43

Note. [†] Percentage is reported for gender, unemployed, new partner, and presence of small children, and the interaction term. Exp(B) stands for the natural log of the odds ratios; a change of one unit on the part of the predictor multiplies the odds by e^B. Model 2 includes the interaction term between being a female and having young children.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Results for the Russian sample are presented in Table 15. Again, the larger class ('temporary drop') was treated as the reference group. In comparison with this group, members of the 2nd class, 'overall stability with a temporary relief', are more educated, have higher income, higher internal control beliefs, are in a better health, and are less likely to be unemployed. In both samples, no gender differences with regard to presence of young children were found. McFadden R^2 in the Russian sample is equal to 0.09 (for both models), Cox-Snell R^2 is equal to 0.12 (for both models).

Table 15. Predictors of Class Membership (Results from Multinomial Logistic Regression), Russia

Predictor	Model 1			Model 2
	Class 1 (Overall Increase with a Temporary Drop)		Class 2 (Overall Stability with a Temporary Relief)	Class 1 (Overall Increase with a Temporary Drop)
	Mean[†]	Exp (B)	Mean	Exp (B)
Internal resources				
Age at divorce	42.1	1.01	41.6	1.01
Gender (female)	71.4	0.87	71.5	0.97
Internal control (z scores)	19.1	0.94**	20.0	0.94**
Health dysfunction (z scores)	0.06	1.31**	-0.09	1.32**
External resources				
Education	10.9	0.89**	11.5	0.89***
Income	7.25	0.71***	7.82	0.71***
Unemployed	21.8	4.13***	9.7	4.05***
New partner	31.0	0.89	31.3	1.15
Presence of small children	19.4	1.01	19.0	1.49
Gender*kids	14.36		15.66	0.58

Note. [†] Percentage is reported for gender, unemployed, new partner, and presence of small children, and the interaction term. Exp(B) stands for the natural log of the odds ratios; a change of one unit on the part of the predictor multiplies the odds by e^B. Model 2 includes the interaction term between being a female and having young children

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

4 Discussion

Our findings supported the hypothesis 1a and rejected the hypothesis 1b. The overall impact of marital dissolution in West Germany is stronger than in Russia, but only during the anticipatory stage of adaptation process. What is more interesting is that the divorce-related dynamics of SWB reflected the socio-cultural meaning of divorce in the two societies. In West Germany, the waiting time between actual separation and formal divorce may encompass several years, which might result in much stronger anticipation effect compared to Russia, where divorce procedure is simple and cheap. Thus, in West Germany dealing with possible negative consequences of a broken marriage, which might result in lower SWB, is observed primarily immediately before the formal divorce; as soon as the

union is formally dissolved, SWB bounces back to the person-specific baseline. In Russia, it might be the case that formal divorce does not coincide with solving all emotional and financial troubles related to divorce, therefore, individuals' SWB remained significantly below the baseline for one more year.

The negative effect of remaining divorced for five or more years in Russia may be attributed to the strong cultural norm of being married. Moreover, the remarriage rate in Russia is quite high (Mills, 2004), therefore, a divorcee who does not remarry is likely to face stigmatization.

Even though it would be difficult to attribute differences in the impact of divorce to a particular feature of the context, several factors are able to lessen the effect of divorce in Russia, such as high rates of marital disruption, liberal divorce legislation, and instability of social norms in the transitional period (all these factors, possibly, lead to low stigmatization of divorce).

Regardless of the overall effect of divorce in Russia or West Germany, inter-individual differences in reaction to this event exist in both countries. Both populations consist of distinct classes of individuals following different trajectories. Our analyses allowed revealing certain similarities and differences between the two countries. In both countries the 2-class solution appears to be the best. One trajectory ('temporary increase') has been found in both samples. Due to the use of non-weighted data, we are not able to make generalizations about the population as a whole; however, in our samples, the 'temporary' relief pattern was more frequently met in West Germany (91.2 % of the sample) than in Russia (43 % of the sample).

The second adaptation pattern (which is labeled as 'recovery' for the German sample and as 'temporary dip' for the Russian one) is characterized both by similarities and differences between the two countries. On the one hand, in both countries we observe a dip in life satisfaction at the time of divorce. On the other hand, in the German sample we

find longer anticipation process and a steeper decrease in SWB in comparison to Russia; this, probably, reflects the longer waiting period between the actual separation and divorce. Another explanation could be that in Germany getting a divorce involves higher costs than in Russia; therefore, the process of making the decision might take quite a long time and result in decreased SWB prior to marital dissolution.

Inter-individual variability in divorce-related SWB dynamics reflects differences in the resources people possess. The most interesting questions in this respect are a) which resources help people to remain on a higher level of SWB after marital dissolution (i.e., have protective function) and b) whether resources bear a universal character, or, depending on the context, the structure of protective and risk factors is different. In line with the argumentation of Staudinger *et al.* (1999), we hypothesized that in more heterogeneous and less structured societies (like Russia) a larger number of significant class membership predictors would be found.

All in all, our analyses show that resource-rich individuals are more likely to remain on higher levels of SWB both prior to a crucial life event as well as afterwards. We also find that some resources appear to have a more universal protective function than others; being employed, having more years of education and being in a better health help to remain on higher level of SWB in both societies. Other predictors seem to be more context-specific. In West Germany, but not in Russia, having a new partner shortly after divorce is important. This finding is somewhat counterintuitive. Having a new partner can be an operationalization of a number of constructs; for instance, it can represent social support, having an additional social role, or emotional support. If one treats this variable as a proxy measure for social support, one could expect its high value in Russia, given the strong cultural norm of being married, as well as importance of informal social network in a state with weak institutions. Our findings, however, suggest that having a new partner is, probably, not the best proxy measure for social support and quality of the informal network.

Income and internal control play a more important role in Russia. Higher predictive power of income in Russia is perfectly in line with the literature: income is stronger correlated with SWB in countries with lower levels of affluence, thus, being generally important for maintaining higher levels of well-being (e.g., Delhey, 2010). Importance of control beliefs in Russia is counterintuitive, as some literature supports the opposite relationship: for example, Staudinger *et al.* (1999) find that in well-structured societies (e.g., Germany), where the "social welfare system provides a context richer in behavior-outcome contingencies" (p. 314), internal control has higher adaptive value. Thus, one could reason that Russian society does not provide an appropriate context for action-outcome contingency. On the other hand, it might be dysfunctional to rely on the state and the social institutions in Russia; therefore, maintaining internal control in such a situation is more beneficial for well-being. In order to estimate the overall explanatory power of the multinomial logistic regression models, we used proxies of standard R^2 measures – McFadden R^2 and Cox-Snell R^2. All in all, values of these fit criteria are rather low; however, they are somewhat higher in Russia than in West Germany. This finding supports our idea that salience of personal resources depends on the degree of society's predictability.

Limitations

The study is not free from certain limitations. Firstly, it does not disentangle the influence of particular socio-structural characteristics on the adaptation outcome. We can only speculatively attribute the lower impact of divorce on SWB in Russia (in comparison to West Germany) to a group of characteristics, such as high rate of divorce, liberal divorce legislation, higher rate of women labor market participation, and weakening of social norm of being married due to transitional anomie. We are not able to determine, however, the relative importance of these factors. Second, the chosen methodology (in particular, multinomial logistic regression) does not allow the comparison of effect of particular resources on adaptation to divorce in the two countries. For example, being unemployed is

found to be a risk factor in both societies, but we are not able to claim that in Russia the effect is stronger than in West Germany. Finally, the data are non-weighted. We determined that some individuals (i.e., younger men) are likely to drop out of the panel after having undergone a divorce. This might have led to a selection bias. Although our goal was not to obtain results which could be generalized over the two nations, using the non-weighted data might make it more difficult to compare certain characteristics of adaptation to divorce in West Germany and Russia, such as mixing proportions of classes.

5 Conclusion

This study has used two representative large-scale datasets to analyze the impact of marital dissolution on SWB in two societies with different structural and ideational contexts – Russia and West Germany. The analysis also reveals both inter-individual and cross-cultural variability in the impact of marital disruption. In addition, our findings show that the structure of personal resources which are involved in regulation of divorce-related SWB dynamics is also context-dependent.

V. General Discussion

When researchers, as well as the lay public, seek to find the ultimate recipe for happiness, competing theories emphasize different determinants of well-being. The livability theory (Veenhoven, 2000) emphasizes the importance of living conditions; the set-point theory (which unites under the umbrella concept of the set-point such theoretical frameworks as the personality theory, the hedonic equilibrium theory, and the hedonic treadmill theory) gives priority to the individually-set SWB baseline, which is characterized by a high degree of stability, and fluctuates only temporarily in response to external events (Brickman & Campbell, 1971; Costa & McCrae, 1980; Headey & Wearing, 1989). The massive evidence for the set-point paradigm created grounds for skepticism with regard to the possibility of a long-lasting improvement of happiness. However, as empirical research on hedonic adaptation continues, evidence questioning the theory accumulated. First of all, it became clear that to some events, such as unemployment, people hardly ever adapt (e.g., Clark, 2004); it was also established that people adapt much more quickly to some domains (e.g., increase in income) than to others, such as changes in health (Easterlin, 2005). Moreover, certain long-term changes can be predicted on the basis of personal traits: extraversion possibly leads to a gain in life satisfaction, while neuroticism increases the likelihood of a loss (Headey, 2010).

Growing discordant findings, therefore, call for a profound revision of the theory. As Headey (2010) points out, "SWB researchers ought to try and go beyond patching up set-point theory, and see if the theory can be constructively revised or replaced [...] We now need a theory which also accounts for the finding that substantial minorities do record large upward or downward changes in SWB" (p. 12). He offers two perspectives

for the theory development which would allow accounting for long-term upward and downward changes in SWB. The first refers to substantial changes predicted on the basis of personality traits. The second refers to the choice of life priorities, which matters for life satisfaction. Engagement in non-zero sum domains (i.e., those domains where a gain for one person can also be a gain for another person, unlike in zero-sum domains, where one person's gain is another person's loss) seems to be a way to achieve substantial gains in life satisfaction. Such domains include family, community activities, and friendships.

With this thesis, we contributed to another perspective of the hedonic treadmill theory development; namely, deconstructing the mean level adaptation profile and exploring the differences between events, individuals, and nations. Event-centered and variable-centered studies of critical life events (Inglehart, 1991) have gathered a lot of evidence on coping with a particular event (see, for example, Wortman & Silver, 2001, on bereavement, Kuebler-Ross, 1969, on dying), as well as on inter-individual differences in the reaction to events (e.g., Bonnano *et al.*, 2004; Mancini *et al.*, 2011; Schindler & Pinquart, 2007), whereas research on cross-cultural differences in adaptation is still rather limited. By applying a magnifying glass on the timing of events, individuals, and social structures, the thesis sheds light on the diversity of adaptation pathways. Below we summarize the major findings of the three studies.

Summary of the Findings

The 1st study demonstrated that attention must be paid when a researcher applies the same methodology to different events. The goal of the study was twofold. First, we tested whether the precision of temporal localization (yearly vs. quarterly) of several critical life events affected the observed SWB trajectories. Second, we predicted that events differed with regard to their sensitivity to the precision of temporal localiza-

tion. The results revealed two clusters of the events – positive (marriage and birth of child) and negative ones (divorce, widowhood, and unemployment). Whereas for positive events yearly and quarterly measurements did not result in different hedonic adaptation profiles, for negative events, more precise temporal localization revealed different trajectories; namely, the yearly resolution led to an underestimation of the immediate effect of the event. Thus, sensitivity to the precision of temporal localization varies by *valence* of the event.

The findings of the study reflect the phenomenon known in psychology as "bad is stronger than good", or, the "negativity bias" (see Larsen & Prizmac, 2008, for a review). The phenomenon manifests itself in an asymmetry in reactions to positive and negative experiences, as well as in the amount of time necessary for habituation. Individuals tend to react more strongly and adapt more slowly to negative experiences. This asymmetry can be interpreted from an evolutionary perspective. Positive developments do not signal any threat to survival, they only inform the individual that things are going well. On the contrary, negative developments carry a potential threat to overall functioning and well-being; therefore, they evoke a stronger immediate reaction and request more intensive emotional and cognitive involvement in order to restore the SWB equilibrium. That is why the SWB trajectory for negative events is characterized by a high degree of volatility around the time of the event. Evolutionary functionality is, however, not the only possible explanation of the 'negativity bias'. Our findings may well reflect a particular cultural setup which socializes individuals in such a way that they attend more to negative experiences rather than positive ones. Cross-cultural studies provide robust evidence on cultural differences in estimating a hypothetical probability of negative and positive events (Heine & Lehman, 1995), as well as on differences in the bases of self-esteem. For Americans, for example, success situations would have more impact on increase in self-esteem than failure situations would have on its decrease; for Japanese,

the opposite holds true (Kitayama *et al.*, 1997). The literature on regulatory focus (promotion vs. prevention mode) suggests that these cultural differences reflect more general differences in regulatory focus (Lee *et al.*, 2000). In particular, the tendency of East Asians to focus more on negative vs. positive information may reflect a general prevention focus of an interdependent self, because those who are motivated to avoid failure may ruminate more on possible and actual failures; on the other hand, beliefs of Americans in the greater impact of success in comparison to failures on self-esteem may reflect a promotion focus of an independent self. Thus, it is plausible that a strong negativity bias is not observed in all cultures.

Since there is also some divergence within clusters of positive and negative events (i.e., in the case of widowhood SWB volatility is much higher than in the case of divorce), other event characteristics, such as predictability and compliance with social norms, seem to affect the adaptation trajectory as well.

Methodologically, the choice of the measurement precision depends on the study's objectives. If the goal is only to determine whether people adapt to a certain experience or not (i.e., if their SWB returns to the pre-event level), precise temporal localization is not the most crucial issue. It gains importance, however, if we want to build accurate adaptation profiles for as many crucial life experiences as possible. Also, defining which stage of adaptation the person is going through may be important for the identification of the protective resources and risk factors that influence the adaptation process at different stages. These investigations may have implications for policy debates, for example, in the sphere of hedonic damages compensation (see below).

The aim of the 2nd study was to shed light on inter-individual differences in adaptation to divorce. The findings confirm that the reaction to divorce is not uniform, but very much depends on available resources. The study revealed three different types of adaptation trajectories – (i) stability with a temporary relief, (ii) chronic strain, and (iii)

recovery. It does not come as a surprise that, indeed, individuals who are well endowed with internal and external resources are more likely to achieve positive life satisfaction outcomes after experiencing a divorce (i.e., experience a short-term relief effect at the point of divorce, against the background of overall SWB stability). The relevant resources include age, gender, income, employment status, having a new partner, and having an optimal (i.e., neither too few, nor too many) number of social roles. The results contradict some of the existing findings, but go in line with others. For example, the presence of young children, which is assumed to be a major risk factor for women (Williams & Dunne-Bryant, 2006), did not make any difference for the adaptation profile. On the other hand, the importance of age, income, and employment status of the individual was once again confirmed (e.g., Wang & Amato, 2000).

It has been already widely discussed (see, for example, Heady, 2010) that the growing empirical evidence which contradicts the central tenets of the set-point theory calls for a theory revision. Our findings support the necessity of such a revision. Although, strictly speaking, a large part of our sample followed what is traditionally described as the 'adaptation profile' (i.e., an initial reaction to divorce, followed by a gradual return to the individually set baseline), this pattern manifests itself in different forms. Respondents may experience both a decrease and an increase in life satisfaction right after the divorce, so that the post-event SWB trajectory may be upward or downward. The findings call for rethinking of the usage of the term 'hedonic adaptation'. Does it make sense to define hedonic adaptation as a diversion from the baseline and eventual return? We argue that this definition is rather limited because it does not reflect the whole range of coping efforts and possible outcomes of these efforts. Also, such a definition does not fully reflect the dynamic nature of adaptation; for example, individuals, who do not return to baseline (e.g., those following the chronic strain trajectory), are labeled as 'non-adapting'. Remaining on a lower level of SWB after a

negative event, however, does not mean that no coping efforts have been made. On the contrary, it is very likely that the individual continues to attend to the experience, make attempts to explain it, and to overcome its negative consequences. Perhaps, available resources do not suffice to attain a complete recovery, or priorities are set such that full recovery is not reached yet. Nevertheless, even though the process of adaptation has not been yet completed, it still continues. Instead of following the definition offered by the hedonic treadmill model, we refer to 'adaptation' as to *any* event-related SWB dynamics.

Diversity of adaptation profiles might, on the one hand, create grounds for worries, as it means that people might face long-term (or, even indefinite) negative consequences of marital disruption. On the other hand, it shows that the process of adaptation is, at least to some extent, flexible and manageable. In this study, we focused on the role of internal and external resources in divorce-related SWB variability and have demonstrated their importance. This is an important contribution to the claim that individual efforts in regulating and maximizing well-being are not useless. One can recognize important protective resources and develop anticipatory strategies of resource management in order to ensure the best possible outcome.

The relevance of particular resources is not only contingent on the individual, but also on the larger socio-economic and cultural context a person lives in. The 3rd study explored this issue by comparing the impact of divorce on SWB in Russia and West Germany. We found that the divorce-related dynamics of SWB reflect the social and institutional constraints of divorce in a given society. In a society like Russia, with high rates of marital disruption, liberal divorce legislation, and instability of social norms during the transitional period, divorce affects SWB in a different way when compared to Germany; for instance, the anticipation period is much longer in Germany. At the same time, inter-individual differences in the reaction to this event were found in both coun-

tries. In both samples we discovered groups of individuals who experienced negative and positive divorce-related SWB changes. As has been already shown in the 2nd study, the trajectory followed by people depends on available resources. The 3rd study shows that the trajectory also depends on the meaning of those resources in a given country. We find that some resources, such as employment, education, and health, appear to have a rather universal protective function. Other predictors, such as income, having a new partner, and control beliefs, seem to be more society-specific. Our findings support one of the central claims of life span theory about historical and cultural embeddedness of resources (Baltes *et al.*, 1998). Once again, we showed that 'being on a hedonic treadmill' is not inevitable. The context is able to lessen or aggravate the consequences of a choice. It is also able to increase salience of certain resources.

Contribution to Theory and Policy

We would like to argue that the three studies contributed to the further development of the SWB theory, as well as to several aspects of social policy. In the following, we discuss them in turn.

The contribution to the hedonic adaptation theory development is threefold. First, we provided new empirical evidence on the limitedness of a mean level adaptation pattern; second, we drew attention to narrowness of the definition of 'hedonic adaptation'; finally, we described certain methodological limitations which are often ignored in the literature.

Extension of Previous Work. A number of studies (e.g., Bonnano *et al.*, 2004; Pinquart & Schindler, 2007) have demonstrated that individuals show very different reactions to critical life experiences; thus, it is time to 'step off the hedonic treadmill' (Mancini *et al.*, 2011). This thesis provides additional evidence that a generalized pattern (i.e., averaging across time and individuals) does conceal multiple paths of adaptation. The observed hedonic adaptation profile is a result of interaction between a) the

event, b) individual resources (internal and external) and c) the larger societal context. Inter-individual differences in available resources and the exact timing of the event should not be ignored in a comprehensive adaptation research.

Our results extended the previous work also by exploring the possibilities of applying micro-analytical approach to a large-scale longitudinal dataset. This was done in an attempt to bridge two research trends that until recently had little cross-fertilization: the economic literature, which analyses long-run datasets but largely ignores inter-individual differences, and the psychological coping literature, which sheds more light on inter-individual variability, but relies on much smaller samples, often suffering from selectivity. On the one hand, such a strategy allowed to profit from large non-selective samples and long time-span; on the other hand, we were able to obtain more precise adaptation profiles for the events in question and get a glimpse on differences in adaptation patterns.

Rethinking 'Adaptation'. Within the classical hedonic treadmill model, the term 'set-point' was defined as an individually fixed level of SWB (determined genetically and by early childhood) which remains stable throughout the life time. Hedonic adaptation is, thus, conceptualized as a return to the set-point, following the diversion from it due to some critical external experience. Such a definition of the set-point, however, evokes a number of questions, such as, at which stage of the life span can we consider the set-point being 'fixed'? How do we deal with the information about age-related changes in SWB? How do we interpret the findings that for a number of people SWB does substantially change in the long run? Since the concept of 'set-point', coined by Lykken and Tellegen (1996), is extremely difficult to define theoretically, most of the studies formulate only a working definition of a 'set-point'. For example, the use five-year averages of life satisfaction, or predict set-point by a number of unchanging within-person factors (Headey, 2010). Given the difficulty to define the term 'set-point' and high de-

gree of variability in reaction across events, domain, individuals, and contexts, we argue that it is more fruitful to consider adaptation as a process of SWB regulation, rather than as reversion to the 'baseline'.

Awareness of Methodology Limitations. Further analyses on the impact of negative life events, such as an accident, or a natural disaster, would profit from paying attention to the methodological limitation discussed in the 1st study. While designing a longitudinal survey on the effect of an event on SWB, one should carefully consider the choice of time intervals between the measurement points, because making the intervals too long may lead to a substantial loss of information.

In discussion of our contribution to the *social policy debates* we would like to mention three applied aspects of our work – enriching our knowledge on resources that are crucial for achieving a better adaptation outcome, possible impact of the findings on public awareness, and implications of the results for legal practice.

Managing hedonic adaptation. In the Introduction we outlined three strategies of regulating the process of adaptation – recognition of positive activities/events with slower adaptation rates and focusing on them, intentional use of cognitive transformation techniques and, finally, management of the relevant resources. The thesis contributed to exploring the 3rd strategy – the management of the resources.

The thesis provides additional evidence for the conclusion that hedonic adaptation is contingent on available resources. Resource-rich individuals are less likely to experience negative event-related changes in SWB. In order to elaborate an efficient family policy, it is necessary to possess as much information as possible about the consequences of various family transitions, such as divorce, for the individuals involved. Information on resources, which work as protective factors, may help to determine disadvantaged groups who suffer the most from divorce. Individuals, who are potentially more harmed, due to limited availability of important protective resources, can be a target of

the protective policy measures. As family policy focuses on a particular society, one needs to understand which resources determine who is at risk of becoming a member of the disadvantaged group in this particular country. The research on adaptation to unemployment is, perhaps, the most important for public policy, because unemployment is extremely difficult to recover from: not only does SWB stay on the lower level than before losing the job, subsequent unemployment spells cause sensitization (Luhmann & Eid, 2009).

Increasing Public Awareness and Influence on Public Discourse. Presumably, decisions to marry, divorce, have children, migrate, purchase, etc. are made in the hope for achieving a greater happiness. Yet, people are rather bad at predicting the consequences for SWB of their actions or incidents that may happen to them. For example, people overestimate the possible drop in SWB due to disability (Ubel *et al.*, 2005). Striving for an increase in material well-being is a good example of overestimating a possible gain in SWB (Easterlin, 2005). Such mispredictions might be due to certain basic mechanisms of cognitive functioning, such as dependence of the prediction on the outcome framing (Tversky & Kahneman, 1981). They might be also due to simple lack of information on possible emotional outcomes. At the same time, costs of increased opportunity to choose are in the middle of scientific debates. The intrigue is that researchers sometimes come to completely contradictory conclusions. Schwartz (2004) concludes that increased opportunities of choice make individuals less happy and even lead to greater rates of depression. According to Veenhoven (2000), however, empirical data suggests that people are happier when given the opportunity to choose. This is especially true for affluent societies. Therefore, further analysis of the processes and mechanisms underlying individuals' ability to deal with multiple-choice situations is needed. The least the SWB research can do is to inform people about the consequences of their choices and circumstances under which the choice might lead to the better out-

come. Another important message would be that efforts to improve SWB are not useless; one can certainly strive for better living conditions and manage the impact of life events.

Public discourse shapes the subjective meaning and influences interpretation of an event, thus, affecting the speed of adjustment. Let us consider the example of divorce. Consequences of marital dissolution are a subject of acute scientific and public discussions. 'Conservative' discourse on divorce emphasizes the two-parent family as a fundamental social institution and a prerequisite of children's well-being. Increase in divorce rates, according to this view, is a societal problem and a factor of social destabilization. On the other hand, 'liberal' discourse emphasizes divorce as an appropriate solution for an unhappy marriage, an achievement of modernity, which increases chances for personal happiness. Naturally, conservative discourse does not contribute to a growing acceptance of divorce. If this discourse is the dominating one, that is, if divorce is generally perceived in a given society as an ultimately bad development, or even as a personal failure, an individual who contemplates the decision to get divorced may experience additional emotional load due to the necessity to deal with stigmatization. Reliable findings on the range of possible reactions to divorce may contribute to shape the public discourse. For example, societal acknowledgment of the fact that divorce is not a uniform reaction, that in many cases it becomes an exit from a dysfunctional union and leads to improvement in SWB, may be important for the future development of divorce debates and further changes in public perception of this event (e.g., lessening possible stigmatization burden). Of course, one could argue that the prerequisites of individual well-being are not necessarily the same as prerequisites of societal well-being. In other words, what is good for an individual might not necessarily be good for the whole society. For example, increased rates of divorce may signal growing anomie or societal destabilization, whereas in each individual case divorce might be a happy solution for an

unhappy marriage. Whether the social policy emphasizes societal stability or 'greater happiness for greater number' depends on the general ideology and goals of social policy. However, if SWB is to be taken into account, information on the possible positive consequences of divorce on the micro-level is crucial for growing acceptance of marital disruption.

Hedonic losses and legal practice. A noteworthy topic, closely related to hedonic adaptation, is the valuation of unpriced goods. In particular, this issue is relevant for hedonic losses and legal practice. Even though some highly valuable matters, such as health and love, are not assigned a financial value, legal practice sometimes faces (i.e., in case of disability or an accident) the necessity to determine the amount of an emotional damage and assign a financial compensation.

Several approaches to calculate emotional damages of losses, such as death of a partner, or a several health injury, and to translate the drop in SWB into monetary terms have been developed within the happiness literature. One such strategy is estimating life satisfaction regressions, which include an event and income, and then calculate the trade-off between the satisfaction effect of income and the satisfaction effect of the life event (here, income coefficient is compared with the event coefficient). Oswald and Powdthavee (2008) suggest this method for assigning a financial value to the unhappiness caused by death of a loved one (spouse, child, or parent)[71]. Frijters *et al.* (2010) suggest to estimate how much additional income a person must be given in order to have the same discounted happiness as someone to whom the event did not occur (here, the event coefficient is compared not to the income coefficient, but to positive financial changes, such as bequest or winning a lottery; this method involves a

[71] For example, by their calculations the hedonic compensation annual amount in the first year for the death of a child could be of the order of $200,000.

comparison between the Discounted Life Satisfaction of an event, with the DLS of a positive financial shock).

While such attempts to calculate the value of an immediate shock are being undertaken, some authors argue that when calculating the monetary value of a hedonic loss, one needs to account for hedonic adaptation. Discussing the case of disability[72], Bagenstos & Schlanger (2007) go as far as suggesting that "we contend that while tort law should compensate for the physical pain and societal exclusion resulting from disabling injuries, as well as for the cost of medical care, assistive technology, and personal assistance, there should be no recovery for hedonic losses believed to attend disability" (p. 775). There are two bases for such reasoning. First, "disability does not inherently limit enjoyment of life to the degree that these courts suggest. Rather, people who experience disabling injuries tend to adapt to their disabilities" (p. 749). Second, individuals are rather bad in 'affective' forecasting, that is we seriously mispredict the consequences of our actions to SWB (Gilbert *et al.* 1998). The decisions regarding hedonic damages are normally taken by people who know little about how individuals with disabilities actually feel and tend to overestimate the damaging effect of a disability. Therefore, the predictions are often biased.

The subject is an ethically sensitive one. Here we do not attempt to discuss whether the possibility of hedonic adaptation should be taken into account while translating loss of health into monetary terms (especially because there is still a long way to go before developing a precise and valid method to do that). We only want to point out that if such attempts are made, a precise adaptation profile for each particular event is

[72] "Hedonic damages compensate for the lost enjoyment of life that results from a tortious injury. Pain and suffering damages traditionally compensate "for the physical discomfort and the emotional response to the sensation of pain caused by the injury itself," and mental anguish damages traditionally compensate for "shock, fright, emotional upset, and/or humiliation" caused by the tort." Hedonic damages, by contrast, compensate for limitations "on the injured person's ability to participate in and derive pleasure from the normal activities of daily life, or for the individual's inability to pursue his talents, recreational interests, hobbies, or avocations." (Bagenstos & Schlanger, 2007, p. 748)

needed. A large part of these studies (the paper by Frijters *et al.*, 2010 is an exception) relies on profiles that might be imprecise, due to use of annual measurement. To make valid calculations, knowledge of a precise adaptation profile is necessary in order to avoid underestimation of the initial reaction. This is especially important for the negative events, such as divorce, widowhood, and unemployment, as our 1st study shows.

Limitations

The study is not free from certain limitations. Firstly, measures of life satisfaction are available only on an annual basis. Thus, in the 1st study we were not able to trace individuals as they move from the 1st quarter to the 2nd one, and so on. Even though the methods of panel data analysis which allow controlling for the unobserved heterogeneity still could be implemented, unavailability of more frequent measures of SWB makes it impossible to trace the complete adaptation process at a higher temporal resolution. This limitation is also valid for the 2nd and the 3rd studies. Divorce is an event which is sensitive to temporal localization, as the 1st study shows: the dynamics of life satisfaction around the time of divorce (i.e., during the first year after experience) are characterized by high volatility. In the two studies we had to neglect this finding.

Another limitation is that the data are non-weighted. All events in question might be a factor of dropping out of the survey. In this study, we do not take into account that some individuals (usually those with low SWB) might have stopped participating in the SOEP or the RLMS after having undergone marriage, divorce, etc., which might have led to selection bias. We did not aim at obtaining results, representative for the whole nations; however, usage of non-weighted data should be kept in mind and help avoid generalizing conclusions. This is especially important for the 2nd and the 3rd studies, where we determine mixing proportions of the latent classes. Individuals who dropped out of the panel due to becoming divorced are not selected in the samples (we

only selected those who reported life satisfaction in the year of divorce). Thus, the outlined adaptation trajectories can not preclude the existence of other patterns which simply escaped our attention. As our primary goal was to explore the resources that are accountable for maintaining positive SWB outcomes, this limitation does not invalidate our results. Usage of weighted data would allow, however, drawing generalizations over the whole population.

In the thesis we focus on formal transitions. This decision is made in order to stay with the mainstream of the hedonic adaptation literature. However, formal transitions, such as the dates of actually getting married or divorced, are not necessarily the best reference points for analyzing SWB dynamics. In a number of societies (Germany is among them), premarital cohabitation is a social norm. It is also often the case that being actually separated for a certain time span is required for filing for divorce (once again, this is a requirement in German divorce legislation); even if it is not a formal requirement, the formal divorce is often preceded by a period of actual separation. However, if we disregard non-formal transitions, such as start of cohabitation and actual separation, we are likely to overlook important event-related dynamics of SWB and arrive at incorrect conclusions. For example, in our 2nd study we found that a large share of the respondents does not experience negative divorce-related changes in SWB. This might be due to the fact that only formal divorce is taken into account, whereas most of the negative consequences are dealt with before the formal divorce actually took place. If we rely on these findings when trying, for example, to elaborate recommendations for family policy, we might mistakenly underestimate the negative consequences of marital separation.

While choosing internal and external resources for the analysis of class membership predictors in Studies 2 and 3, we were limited by the availability of measurements of resources in the datasets we used. Therefore, a number of important resources, such

as personality traits (Big Five) or availability of various kinds of social support, are left out. We would very much have liked to enrich the list of resources with psychological measures, such as Big Five, value orientations, attribution styles, cognitive capacities. Also, while considering each particular event, it would be good to have some additional information surrounding this event; for example, in the case of divorce, it might be important to know which of the partners filed for divorce, what was the marriage quality in the eyes of the partners, whether one of the partners moved directly from one relationship to another, etc.; in case of widowhood, it is worth knowing whether the death of the partner was foreseen or unexpected, whether an extended period of care giving preceded the loss, and so on.

Implications for the Future Research

The limitations of the study offer some guidelines for future research. One fruitful direction of the future investigation would be to take into account not only formal transitions, but also 'informal' ones. It might be the case that start of cohabitation and separation invokes higher turbulence in SWB than marriage and divorce. So far, only few studies have considered 'informal' transitions (e.g., Zimmermann & Easterlin, 2006). The results indicate that these transitions do evoke substantial volatility in SWB.

The majority of research focuses on short-term time spans and the data coming from Western countries. Using other datasets would allow to use such analytical techniques as multilevel analysis and estimate the effect of country-level characteristics in the model. Moreover, replication of the results of the 1st study would shed light on the degree of cultural relativism of the negativity bias.

The 1st study took into account only one characteristic of events – valence. As other characteristics, such as the pervasiveness of event, or predictability, seem to also

influence the adaptation profile, taking these characteristics into account would be a valuable addition.

Within this study, only *geographic* universality of resources was analyzed. Another line of research could be the analysis of their *temporal* universality. Different resources may be salient at different stages of adaptation. For example, it might be the case that immediately after the loss of partner it is self-regulation skills that matter, whereas in a year after becoming widowed it is more important whether the person has a sufficient income, or available social support. To our knowledge, no study takes this matter into account. Nowadays, due to the availability of long-term longitudinal datasets, this gap can be filled.

The findings of the 2nd study draw attention to interrelationship and interdependence between life domains in the SWB architecture. For example, we all know that being in good health and having a good income makes us happier, but we are not always fully aware of the mediating and moderating effects of health and income on happiness which occur while dealing with family life events. Moreover, resources seem to be linked, they 'co-travel in resource caravans' (Hobfoll 2002, p. 318). This means that possession of some resources fosters the development of other resources (Staudinger *et al.*, 1999). For example, it is likely that pursuing education helps to develop internal control beliefs. We need to further understand how the 'resource caravans' are formed. It is also important to note that one SWB pattern may be a result of different combinations of resources; in the systems studies this principle is called equifinality. For example, being financially well off and well educated may protect from experiencing a big drop in SWB due to divorce; however, the same outcome can be achieved, perhaps, by having a broad social network and being at a young age. Exploring equifinality is important for understanding of the compensatory potential of resources

After having achieved some understanding of the determinants of SWB, researchers turned their attention to consequences of SWB for individuals and societies as a whole (e.g., Veenhoven, 2006). It turned out that there are good reasons to explore the architecture of SWB, as SWB seems to be a factor of economic development and societal functioning. Happy people are more active, have longer life expectancy, are in better health (Veenhoven, 2006), are more involved in society, and are more successful in personal earnings (Graham *et al.*, 2004). Happiness also leads to prosocial behavior and makes people more prone to choosing altruistic and cooperative coping strategies (e.g., Magen, 1996). However, while searching for long-term well-being recipes, several sources of pessimism were identified, such as genetically determined set-point for happiness and hedonic adaptation (Lyubomirsky *et al.*, 2005). Indeed, a number of findings confirmed that, *on average*, individuals adapt rather rapidly to various experiences. Naturally, the question arose, whether the efforts we make in order to become happier are of any use? In this study we used a magnifying glass to show that adaptation patterns largely depend on the characteristics of events, individuals and socio-structural context. The more light we shed on adaptation, the more variability we find. Such variability shows that people are far from being bound to their 'happiness set-points'; rather, they are able (at least, to some extent) to actively interfere in the process of dealing with life's ups and downs.

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Appendix

Table 1. The Distribution of Life Satisfaction Ratings in the SOEP Subsample of Western Germans, 1984-2007

Score	Frequency	Percent
0	677	0.56
1	530	0.44
2	1,449	1.20
3	2,919	2.42
4	4,169	3.45
5	13,993	11.59
6	12,510	10.36
7	24,971	20.68
8	36,881	30.54
9	13,752	11.39
10	8,410	6.96
Total	120,747	96.60

Table 2. Adaptation to Life Events. The Fixed Effects Model

	Marriage	Birth of child	Divorce	Widowhood	Unemployment
Anticipation stage					
1-3 months before	.345***	.484***	-.263**	-.814***	-.324***
	(.09)	(.09)	(.16)	(.149)	(.13)
4-6 months before	.214**	.257**	-.120	-.446***	-.288***
	(.10)	(.11)	(.17)	(.154)	(.14)
7-9 months before	.204**	.201*	-.585***	-.312**	-.307**
	(.11)	(.11)	(.15)	(.148)	(.13)
10-12 months	.254*	.090	-.379***	-.616***	-.237
before	(.14)	(.11)	(.14)	(.162)	(.23)
Within 1 year	.240***	.282**	-.385***	-.490***	-.240*
	(.061)	(.08)	(.074)	(.079)	(.130)
1-2 years before	.100*	.083	-.457***	-.279***	-.281**
	(.060)	(.08)	(.069)	(.078)	(.119)
2-3 years before	.068	.061	-.303***	-.127*	-.084
	(.060)	(.08)	(.071)	(.077)	(.134)
3-4 years before	.086	.022	-.272***	-.114	.052
	(.061)	(.09)	(.074)	(.077)	(.132)
Adaptation stage					
1-3 months after	.423***	.357***	-.325**	-1.832***	-.917***
	(.105)	(.085)	(.139)	(.132)	(.143)
4-6 months after	.474***	.209**	-.306**	-1.225***	-.406**
	(.084)	(.083)	(.153)	(.127)	(.176)
7-9 months after	.399***	.173**	.317*	-.725***	-.622***
	(.073)	(.086)	(.165)	(.141)	(.201)
10-12 months	.338***	.233***	.311**	-.844***	-.322
after	(.087)	(.088)	(.155)	(.148)	(.226)
Within 12 months	.375***	.221***	-.084	-1.219***	-.606***
	(.045)	(.08)	(.082)	(.072)	(.086)
2 years after	.220***	-.117**	.100	-.370***	-.270*
	(.049)	(.07)	(.10)	(.076)	(.143)
3 years after	.078	-.168**	.109	-.208***	.190
	(.051)	(.08)	(.103)	(.081)	(.171)
4 years after	.169*	-.205**	.141	.011	.124
	(.053)	(.08)	(.113)	(.085)	(.206)
5 years after	.091	-.172*	.315**	.051	.273
	(.06)	(.07)	(.125)	(.092)	(.230)

Note: ***significant at 0.01 **significant at 0.05 *significant at 0.1. Standard errors in parentheses.

Table 3. Characteristics of the selected subsample of the GSOEP (1991-2008)

Characteristic	Mean value (standard deviation in parentheses) or percentage
Number of individuals	720
Mean number of measurement occasions	6
Satisfaction with life	6.57 (1.94)
Mean length of education	12.1 (2.39)
Unemployed (%)	8.9 %
Female (%)	55.7%
Mean age	39.04 (8.8, min. 21, max. 78)
Annual household income (mean)	24777,2 (15382,7)
Number of children in the household (%)	0.75 (0.97)

Note. Mean values and percentages are calculated across all person-year observations

Table 4. Characteristics of the selected subsample of the GSOEP (1991-2008, West Germany)

Characteristic	Mean value (standard deviation in parentheses) or percentage
Number of individuals	508
Mean number of measurement occasions	7.9
Satisfaction with life	6.81 (1.87)
Mean length of education	11.6 (3.08)
Unemployed (%)	6.7 %
Female (%)	55.14%
Mean age	39.22 (9.06, min. 22, max. 78)
Annual household income (mean)	25929,72 (16202,13)
Number of children in the household (%)	0.67 (0.94)

Note. Mean values and percentages are calculated across all person-year observations

Table 5. Characteristics of the RLMS subsample (1994-2007)

Characteristic	Mean value (standard deviation in parentheses) or percentage
Number of individuals	833
Mean number of measurement occasions	5.5
Satisfaction with life	2.43 (1.15)
Mean length of education	11.13 (2.46)
Unemployed (%)	22.7 %
Female (%)	71.4%
Mean age	41.9 (14.57, min. 18, max. 88)
Annual household income (mean)	8577,95 (17249,81)
Number of children in the household (%)	0.66 (0.83)

Note. Mean values and percentages are calculated across all person-year observations

Table 6. Growth Factor Parameter Estimates Conditional Models, SOEP, 3 classes

Parameter	Estimate (mean value of the DV – Life Satisfaction)	S.E.	p value
Class 1 (N = 390)			
Intercept	7.404	0.260	0.000
Slope	-0.089	0.323	0.782
Pre	0.649	0.213	0.002
Post	-0.157	0.112	0.161
Class 2 (N = 89)			
Intercept	5.468	0.520	0.033
Slope	0.004	0.554	0.141
Pre	0.109	1.003	0.207
Post	-1.107	1.427	0.042
Class 3 (N = 29)			
Intercept	2.833	0.724	0.005
Slope	0.251	0.171	0.141
Pre	-1.908	1.512	0.207
Post	2.749	1.518	0.070

Table 7. Predictors of Class Membership (Results from Multinomial Logistic Regression) for West Germany, 3-classes model

Predictor	Model 1				Model 2		
	Class 2 (chronic strain)		Class 3 (recovery)		Class 1 (stable)	Class 2 (chronic strain)	Class 3 (recovery)
	Mean	Exp (B)	Mean	Exp (B)	Mean	Exp (B)	Exp (B)
Internal resources							
Age at divorce	40.20	1.01	39.76	1.02	39.19	1.00	1.02
Gender (female)	46.07	0.60	51.72	0.68	58.51	0.71	0.71
Health dysfunction (z scores)	0.19	1.15	0.21	1.48*	-0.03	1.17	1.48*
Internal control (z scores)	-0.12	0.72	-0.01	0.63	0.10	0.75	0.63
No. of roles	58.2	0.89	84.0	3.37*	60.9	0.90	3.36*
External resources							
Education	10.46	0.90**	10.31	0.87*	11.08	0.89**	0.87*
Income	9.20	0.96	9.22	1.02	9.23	0.95	1.03
Unemployed	14.3	2.6**	7.14	0.68	4.7	2.6**	0.68
New partner	48.7	1.14	44.0	0.62	58.3	1.09	0.62
Presence of small children	19.23	1.21	24.0	1.78	27.18	1.95	2.00
Gender*kids (%)						0.43	0.83

Note. Percentage is reported for gender, unemployed, new partner, number of roles, and presence of small children, and the interaction term. Exp(B) stands for the natural log of the odds ratios; a change of one unit on the part of the predictor multiplies the odds by e^B.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
No differences between Classes 2 and 3 were found, except for a marginal significance of the optimal number of roles: Exp (B) = 0.27, p = 0.06

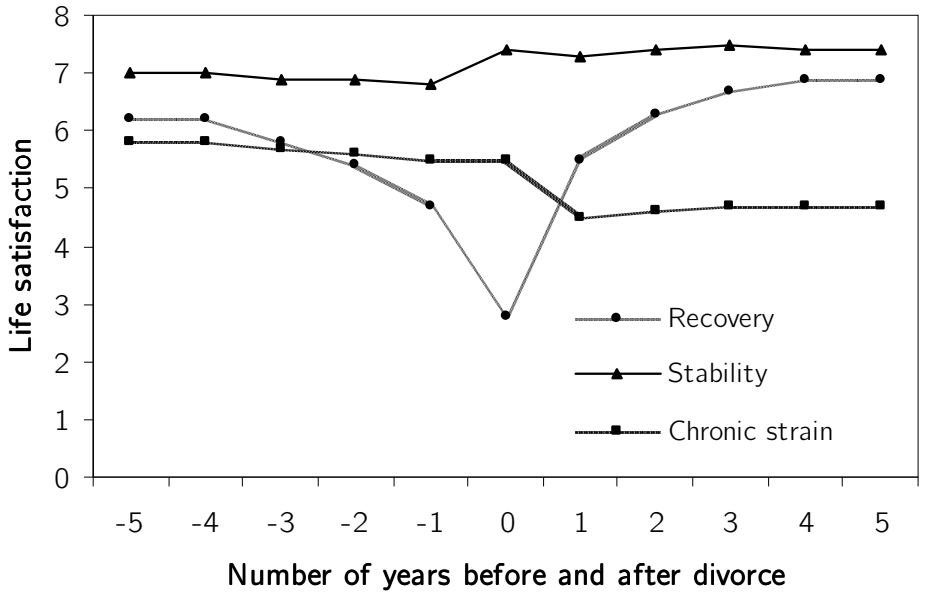

Figure 1. SWB Dynamics Before and After Divorce: Latent Trajectories (3-classes Conditional Model with Covariates), West Germany