

RUNNING HEAD: Missed events

**Nothing Going On? Exploring the Role of Missed Events in Changes in
Subjective Well-Being and the Big Five Personality Traits**

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Abstract

Objective: Missed events are defined as the nonoccurrence of expected major life events within a specified time frame. We examined whether missed events should be studied in research on growth by exploring the role of missed events for changes in subjective well-being (SWB) and the Big Five personality traits.

Method: The samples were selected from two nationally representative panel studies, the German Socioeconomic Panel Innovation Sample (SOEP-IS, total $N = 6,638$) and the Dutch Longitudinal Internet Studies for the Social Sciences panel (LISS, N s between 4,262 and 5,749). Rank-order stability and mean-level change were analyzed using regression and mixed models. Type I error probability was reduced by using conservative thresholds for level of significance and minimal effect size.

Results: Expected but missed events were more frequent than actually experienced events. For SWB, rank-order stability tended to be lower among those who experienced a missed event than among those who did not. For the Big Five personality traits, significant differences between those who did and those who did not experience a missed event were rare and unsystematic.

Conclusion: Missed events merit more attention in future research on growth and personality change, but the effects are probably weak.

Keywords: missed events; major life events; personality development; posttraumatic growth; subjective well-being

Bob was certain that he would be married with children by his 30th birthday. But that day came and went, and there was no potential partner in sight. Instead, his life just continued. Jessica's company was in deep trouble, and she feared for the security of her job. But as others were laid off, she stayed on and the company recovered. Her life just continued. Neither Bob nor Jessica experienced any major changes in their life circumstances. However, it is precisely the absence of such major life events that may have changed these individuals.

In this paper, we examined whether these kinds of expected but missed events, defined below, should be considered in research on growth and personality development more generally. Growth is defined as a positive psychological change emerging as a result of struggling with highly challenging life circumstances (Jayawickreme & Blackie, 2014; Tedeschi & Calhoun, 2004, p. 1). Growth can manifest in positive change in many different outcomes (Infurna & Jayawickreme, 2019), ranging from greater appreciation of life and well-being (Linley & Joseph, 2004; Tedeschi & Calhoun, 2004) to more intimate social relationships (Tedeschi & Calhoun, 2004) to positive changes in life narratives (Pals & McAdams, 2004). Similarly, challenging life circumstances are broadly defined. Although most research in this area has focused on specific traumatic life events (Jayawickreme & Blackie, 2014), there is an increasing recognition that research on growth should also include events that might be perceived as adverse but are not traumatic in the clinical sense (e.g., divorce or job loss; Luhmann, 2014; Seery & Kondrak, 2014) and events that might be perceived as challenging but not as adverse (e.g., childbirth; Mangelsdorf, Eid, & Luhmann, 2019). In this paper, we contribute to this broadening focus by introducing missed events as another potentially challenging life circumstance and by presenting initial empirical data from two nationally representative longitudinal studies on the association between missed events and changes in subjective well-being (SWB) and the Big Five personality traits.

Definition and Operationalization

Most research on growth has focused on major life events, that is, time-discrete changes in life circumstances, status, or roles (Luhmann, Orth, Specht, Kandler, & Lucas, 2014). We define *missed events* as the nonoccurrence of expected major life events within a specified time frame, also known as non-events or missed transitions (Filipp & Aymanns, 2010; Schlossberg, 1981; Sharp & Ganong, 2007). An important aspect of this definition is the notion that individuals have expectations about the likelihood of a specific event. People may expect to experience certain life events simply because they are normal at their age (Heckhausen, Wrosch, & Schulz, 2010). However, expectations can also be influenced by a host of other sources, including perceptions of controllability over the event (Zakay, 1984), temporal (Gilovich, Kerr, & Medvec, 1993) and psychological (Trope & Liberman, 2010) distance to the event, personality traits such as extraversion or neuroticism (Zelenski & Larsen, 2002), and external circumstances that affect the objective likelihood of an event such as an economic crisis preceding one's job loss (Näswall & De Witte, 2016). To operationalize missed events, people's individual expectations about the likelihood of the event have to be measured.

Another important aspect of our definition is the explicit reference to a specified time frame. Without restricting the time frame, many missed events could not be operationalized because whether or not a person experienced a missed event could only be determined once the event itself has become impossible, for example because an irreversible developmental deadline has been reached (Heckhausen et al., 2010). For many missed events, however, there is no such clear deadline (Preiser, Auth, & Buttkewitz, 2005). For example, a person seeking a romantic partner may do so until the very last day of life. In this case, the missed event is a continuous, never-ending state. Defining missed events as nonoccurrence of expected major life events *within a specified time frame* allows us to operationalize missed events even if they are not defined by some natural deadline.

In sum, our definition centers on two important aspects: whether the event was expected within a specified time frame and whether the event occurred during this time frame. Combining these two aspects results in four possible outcomes¹ (Table 1). People with high expectations about an event can either experience the event (*life as planned*) or not (*missed event*) within a specified time frame. People with low expectations about an event can either experience the event (*surprise*) or not (*uneventful life*) within a specified time frame. Note that this definition can be applied to both desirable and undesirable major life events.

Theoretical Perspectives on the Consequences of Missed Events

A central notion in most theories on growth is that (usually adverse) events threaten people's global meaning system or core beliefs, and growth occurs for those who manage to restore and expand their core beliefs (Affleck & Tennen, 1996; Cann et al., 2010; Park, 2010; Tedeschi & Calhoun, 2004). Even though missed events have not yet been studied directly in the context of growth or personality development more generally, multiple theories imply that missed events can have affective and cognitive consequences that are similar to the mechanisms assumed to underlie growth. For example, according to decision affect theory (Mellers, Schwartz, Ho, & Ritov, 2016), emotional outcomes of events are not only determined by the valence of the event itself, but also by one's prior expectations and counterfactual thinking about the event. Counterfactual thoughts are mental representations of alternatives to past events, actions, or states (Epstude & Roese, 2008) that can be upwards (imagining a better alternative) or downwards (imagining a worse alternative) (Markman, Gavanski, Sherman, & McMullen, 1993). Whereas counterfactual thinking is generally normal and adaptive, excessive upward counterfactual thinking can be associated with impaired mental health (Broomhall, Phillips, Hine, & Loi, 2017). Hence, missed events might

¹ For simplicity and to allow prevalence estimates, we treat expectations as a dichotomous variable: an event was either expected or not. It is, however, possible to treat expectations as a continuous variable, ranging from very low to very high expectations.

be associated with changes in well-being and personality, particularly if they involve the non-occurrence of desired events.

To understand the potential longer-term effects of missed events, theories of developmental regulation are particularly informative (Brandtstädter & Rothermund, 2002; Haase, Heckhausen, & Wrosch, 2013; Heckhausen et al., 2010). These theories focus on how people pursue major life goals across the life span and propose that goal engagement is a key ingredient to successful development and well-being. Unsuccessful goal attainment — sometimes reflected in the absence of an expected major life event (i.e., a missed event) — can therefore pose a risk to one's development and well-being and may require people to let go of their goals. This process of goal disengagement has been likened to an action crisis (Brandtstätter & Schüler, 2013), a term that highlights that this process is highly challenging and may require the type of substantial cognitive restructuring assumed to underlie growth (Affleck & Tennen, 1996; Park, 2010; Tedeschi & Calhoun, 2004).

Most of these theories apply to missed events that were desired and for which the non-occurrence is adverse. The mechanisms through which missed desired events might trigger growth closely mirror those through which adversity more generally is assumed to underlie growth (Affleck & Tennen, 1996; Park, 2010; Tedeschi & Calhoun, 2004). However, the concept of missed events can also be applied to undesired events. Although there is little theoretical or empirical research on missed undesired events (but see the research on job security, summarized below), it is plausible to assume that the immediate emotional effects differ between missed undesired and missed desired events (e.g., relief vs. disappointment). Ultimately, however, both types of missed events may lead to growth because they require individuals to deal with violated expectations about the future (for similar arguments regarding growth after highly positive events, see Mangelsdorf et al., 2019; Roepke, 2013). We therefore included events of any valence in this study.

Empirical Findings on Specific Missed Events

For most missed events examined in this paper, previous research is rare or non-existent. The following specific missed events, however, have been studied more frequently.

Infertility. The official definition of infertility (Zegers-Hochschild et al., 2009) includes all the elements of our definition of missed events: the absence of an expected major life event (here: pregnancy could have been expected because couples had to have unprotected, regular sexual intercourse) within a specific period of time (12 months). Systematic reviews of this literature suggest that infertility can be associated with a strained marital relationship during the treatment period and beyond (Luk & Loke, 2015; Tao, Coates, & Maycock, 2012). However, most research in this field was cross-sectional and based on small, highly specific samples (Tao et al., 2012). In one of the few longitudinal studies on infertility, the differences in well-being among those whose treatment was successful versus those who remained childless were minimal (Schanz et al., 2011), but it is unclear from this one study whether these weak differences can be explained by growth among those who remained childless, increased stress among those who had a child, or by any other factors.

Missed Sexual and Romantic Transitions. Although romantic relationships can be formed throughout the entire adult life span, strong norms exist with respect to the age at which most people make their first sexual experiences, enter their first serious relationship, or get married (Heckhausen et al., 2010). Qualitative and cross-sectional studies indicate that individuals who have not made a normative sexual or romantic transition report lower self-esteem, more depressive symptoms, and greater perceptions of social exclusion than individuals who have made these transitions on time (Lefkowitz, Wesche, & Leavitt, 2018; Sharp & Ganong, 2007). Hence, romantic missed events can be highly challenging and eventually require people to make cognitive readjustments, for example by lowering their standards for potential partners (Spielmann et al., 2013) or by disengaging from partnership goals altogether (Wrosch & Heckhausen, 1999).

Job insecurity. Job insecurity is typically defined as “the subjectively perceived likelihood of involuntary job loss” (Sverke, Hellgren, & Näswall, 2002, p. 243). Job insecurity has been associated with various negative outcomes, including lower job satisfaction, trust, physical health, and mental health (De Witte, Pienaar, & Cuyper, 2016; Sverke et al., 2002), showing that (yet) unmet expectations of an upcoming undesired event also qualify as those highly challenging life circumstances that are a central component of theories of growth.

The Present Paper

Should we study missed events as a predictor of growth? To answer this question, we adopt a highly exploratory and descriptive approach to provide initial empirical evidence for the association between missed events and psychological change, analyzing data from two existing longitudinal datasets: the German Socioeconomic Panel Innovation Sample (SOEP-IS), and the Dutch Longitudinal Internet Studies for the Social Sciences panel (LISS). We included missed events from multiple life domains. As indicators for change, we focused on two sets of outcomes that have frequently been studied in the life-events literature (e.g., Denissen, Luhmann, Chung, & Bleidorn, 2019): SWB and the Big Five personality traits. Our findings will provide researchers with an orientation whether or not missed events are a concept that deserves further theoretical development and empirical investigation. The analyses were guided by the following two research questions:

Research Question 1: What is the prevalence of missed events? A more systematic investigation of missed events is particularly indicated if missed events turn out to be a fairly common human experience. As a benchmark, we compare the frequency of expected but missed events to the frequency of major life events in the same time period.

Research Question 2: Are missed events associated with changes in psychological outcomes? Following common practice in research on personality development (Bleidorn et al., 2019; Donnellan, Hill, & Roberts, 2015), we examined two indicators of change: rank-

order change and mean-level change. Rank-order change occurs if individuals change at a different rate or in a different direction such that the relative ranking of individuals on a personality trait changes over time. Mean-level change occurs if the average level of a personality trait changes over time. Rank-order change and mean-level change are independent, and it is possible to observe one but not the other. For example, if some individuals increase and others decrease on a specific personality trait, one would observe rank-order change (because the rank order of the individuals changed) but no mean-level change (because on average, individual-level increases and decreases cancel each other out).

Studies on personality change in the context of major life events (or missed events) should include data collected before the event to control for pre-existing differences and ideally include comparison groups to disentangle event-related changes from age-normative changes (Luhmann et al., 2014). We included two comparison groups: (a) participants who have neither expected nor experienced a major life event in the pre-specified time period (*uneventful group*) and (b) participants who have experienced a major life event in the pre-specified time period (*event group*). The contrast between the missed-event group and the uneventful group was of primary interest: These groups are similar in the sense that neither group experienced a major life event and differ only with respect to their expectations about this event. If these groups nevertheless differ in the amount of change, this would indicate that missed events are a distinct psychological phenomenon worth further investigation. In addition, we explored whether participants in the missed-event group differed significantly from the uneventful group at the time when they made their expectation judgments. We controlled for sociodemographic characteristics that might be related to the likelihood of specific major life events (e.g., age, marital status, employment status).

Methods

Samples

SOEP-IS. The SOEP-IS is a nationally representative annual household panel study in Germany started in 2011 (for details, see Richter & Schupp, 2015). For the present study, our sample included all participants from the SOEP-IS who completed questions on the perceived likelihood of 19 different major life events in the next 12 months (survey year 2014) and on the occurrence of these events in the following survey year (2015) and who provided complete data on at least one dependent variable (Big Five personality traits, SWB) before and after the (missed) event, resulting in a total sample size of $N = 6,638$ (53.6% female, age in 2014: $M = 50.7$, $SD = 17.7$, range from 17 to 96). Event-specific sample sizes and characteristics are provided in the supplemental material.

LISS. The LISS is a nationally representative household panel study in the Netherlands started in 2008 (for details, see Scherpenzeel & Das, 2010). For the present study, our samples included all participants who (a) had at some point during the survey provided information on whether and when they expected a specific major life event to occur in the future, (b) had participated in the study for the complete time period during which they expected the event to occur, and (c) provided complete data on at least one dependent variable (Big Five personality traits, SWB) before and after the (missed) event. The sample sizes were $N = 4,510$ (51.4% female, age before the (missed) event: $M = 39.2$, $SD = 9.5$, range from 16 to 86) for childbirth, $N = 5,749$ (50.3% female, age before the (missed) event: $M = 46.2$, $SD = 12.3$, range from 17 to 94) for job loss, and $N = 4,262$ (59.1% female, age before the (missed) event: 2014: $M = 53.7$, $SD = 21.0$, range from 16 to 97) for job change. Detailed sample characteristics are provided in the supplemental material.

Event Groups

SOEP-IS. Participants were asked in 2014 to indicate how likely it was that 19 different events (see Table 2 for a complete list) would occur in the next 12 months on a scale from 1 (*very unlikely*) to 4 (*very likely*). In 2015, participants indicated whether these events had occurred within the last 12 months. The four event groups (Table 1) were defined based

on these two variables. Among those who had rated the likelihood of the event as likely or very likely (corresponding to scores of 3 or 4), those who had experienced the event in the next 12 months were assigned to the *life-as-planned group* whereas those who had not experienced the event were assigned to the *missed-event group*. Among those who had rated the likelihood of the event as very unlikely or unlikely (corresponding to scores of 1 or 2), those who had experienced the event in the next 12 months were assigned to the *surprise group* whereas those who had not experienced the event were assigned to the *uneventful group*.

Table 1. Four types of event groups

Event occurrence	Event expectations	
	Event was not expected	Event was expected
Event did not occur	Uneventful group	Missed-event group
Event did occur	Surprise group	Life-as-planned group

LISS. We focused on three events for which both the perceived likelihood of the event and its actual occurrence were assessed in the LISS: childbirth, starting a new job (henceforth: job change), and involuntary job loss. For childbirth, the perceived likelihood of the event was assessed by asking participants if they generally wished to have children in the next future and within how many years they wished to have children. For job change and job loss, participants indicated the likelihood of finding a new job or losing the current job within the next 12 months on a percentage scale ranging from 0% to 100%. In contrast to the SOEP-IS, LISS participants were not asked directly whether these events actually occurred. Instead, event occurrence was derived from annual data on work and family status. The definition of the event groups was more complicated in the LISS than in the SOEP-IS because both the perceived likelihood of specific events and the actual occurrence of these events were assessed at multiple waves. We defined the groups as follows: First, we checked whether an

individual had experienced the event of interest anytime during the study. Second, for those who had experienced the event, we checked whether the event had been expected and had occurred within the expected time frame (e.g., within 12 months). We considered only the first occurrence of a major life event and did not examine repeated events. For job change and job loss, we determined that the event had been expected if the perceived likelihood of the event was rated as greater than 50%. In parallel to the SOEP-IS, those individuals who had experienced a specific major life event during the study were assigned to the *life-as-planned group* if they had expected the event to occur and to the *surprise group* if they had not expected the event to occur within the specified time frame. Third, for those who did not experience the event anytime during the study, we considered the most recent available data on the perceived likelihood of the event. Participants who had not experienced a specific major life event during the study were assigned to the *missed-event group* if they had expected the event to occur and to the *uneventful group* if they had not expected the event to occur.

Measures

SWB. We examined life satisfaction and affect as components of SWB (Diener, 1984). In the SOEP-IS, *life satisfaction* was measured annually with a single item (“How satisfied are you with your life, all things considered?”) rated on a scale from 0 (*completely dissatisfied*) to 10 (*completely satisfied*). In the LISS, life satisfaction was measured every 1 to 2 years with the 5-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) using a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Responses were summed across all items to obtain a scale score with higher values reflecting greater life satisfaction ($\alpha = .89$). *Affective well-being* was measured annually in the SOEP-IS by asking respondents to indicate to what extent they felt happy, angry, worried, and sad in the last four weeks on a response scale ranging from 1 (*very rarely*) to 5 (*very often*). To obtain a score for affect balance, the average of the three negative items (angry, worried, sad)

was subtracted from the positive item (happy) (Schimmack, Schupp, & Wagner, 2008). In the LISS, positive and negative affect were measured as separate variables every 1 to 3 years using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Participants indicated to what extent they experienced 10 positive and 10 negative affective states at the present moment, using a 7-point scale ranging from 1 (*not at all*) to 7 (*extremely*). Items were averaged separately for positive and negative items to obtain separate scale scores for PA ($\alpha = .87$) and NA ($\alpha = .93$).

Big Five personality traits. In the SOEP-IS, personality was measured in 2013 and 2015 with a 15-item version of the Big Five Inventory (Gerlitz & Schupp, 2005) using a 7-point scale ranging from 1 (*does not apply to me at all*) to 7 (*applies to me perfectly*). Items were reverse-scored if appropriate and averaged within each subscale to obtain scale scores where greater values reflected higher extraversion ($\alpha = .67$), agreeableness ($\alpha = .45$), conscientiousness ($\alpha = .59$), neuroticism ($\alpha = .62$), and openness ($\alpha = .65$).² In the LISS, personality was measured every 1 to 3 years with the 50-item version of the IPIP Big-Five inventory (Goldberg, 1992) using a 5-point scale ranging from 1 (*very inaccurate*) to 5 (*very accurate*). Items were reverse-scored if appropriate and averaged within each subscale to obtain scale scores where greater values reflected higher extraversion ($\alpha = .87$), agreeableness ($\alpha = .81$), conscientiousness ($\alpha = .78$), neuroticism ($\alpha = .88$), and openness ($\alpha = .76$).

Descriptive statistics for all outcome variables are provided as supplemental material.

Sociodemographic characteristics. We included the following sociodemographic characteristics measured before the (missed) event: age, sex (male, female), log-income, education (number of years of education in the SOEP-IS; highest degree in the LISS),

² Although these internal consistencies are low if judged by traditional standards, they are in the range that would be expected for scales that cover broad constructs with few items (Gosling, Rentfrow, and Swann (2003).

employment status (working, unemployed, not working), and marital status (married, separated, divorced, widowed, never been married).

Data Analysis

The prevalence of missed events (Research Question 1) was estimated by the absolute and relative group sizes of the four original groups (uneventful, life as planned, surprise, missed event) for each event. For most events, the absolute frequencies tended to be low for the life-as-planned group and the surprise group. For the subsequent analyses, we therefore collapsed these two groups into a new group that included all participants who had experienced the event, regardless of whether it was expected or not (*event group*) and limited the analyses to those events with a minimum frequency of $n = 30$ in each of the remaining three groups to permit parametric analyses.

Changes in psychological outcomes (Research Question 2) were examined using two waves of data: the last wave before the (missed) event (T_{pre}) and the first wave after the (missed) event (T_{post}). For indicators of SWB, which were assessed annually in both samples, T_{pre} and T_{post} corresponded to two consecutive waves. For personality, which was not assessed annually in neither sample, T_{pre} and T_{post} corresponded to the years 2013 and 2015 in the SOEP-IS and to the last available score before the (missed) event (T_{pre}) and the first available score after the (missed) event (T_{post}) in the LISS. Rank-order stability was estimated by regressing the T_{post} scores on the T_{pre} scores, group (uneventful vs. missed event vs. event), and the interaction between T_{pre} and group. Both T_{pre} and T_{post} variables were standardized such that the coefficients reflected the correlation between T_{pre} and T_{post} scores of the dependent variables. Mean-level change was estimated using mixed models with occasion (T_{pre} vs. T_{post}) as a within-person factor and group as a between-person factor using Type II sums of squares. Both T_{pre} and T_{post} variables were standardized on the T_{pre} means and standard deviations such that the coefficients reflected the standardized mean difference between T_{pre} and T_{post} scores (Morris & DeShon, 2002). In both analytic models, significant

interactions indicated that the amount of change (rank-order or mean-level) from T_{pre} to T_{post} differed significantly among the three groups. Significant interactions were probed with pairwise contrasts using Tukey adjusted p values. We were particularly interested in the contrast between the missed-event group and the uneventful group because this contrast reflects the effect of unmet expectations. In the mixed models, we additionally examined whether group was associated with any differences in the dependent variable at T_{pre} .

Our exploratory analyses comprised multiple event domains and outcomes, resulting in a large number of separate models³ and requiring us to adjust for an inflated Type I error probability due to multiple testing while maintaining a sufficient power to detect meaningful effects. Following similar studies (Mund & Neyer, 2014; Parker, Lüdtke, Trautwein, & Roberts, 2012), we only interpreted effects with $p < .01$ and a standardized regression coefficient of $\beta > |0.10|$ in the regression models for rank-order stability and $d > |0.20|$ in the mixed models for mean-level change. According to new guidelines in personality psychology, these effect sizes reflect small effects (Funder & Ozer, 2019; Gignac & Szodorai, 2016). To further probe the robustness of the effects, we estimated all analytic models with only the central variables of interest as described above (Model 1) and with additional sociodemographic covariates (age, sex, income, education, work status, marital status) (Model 2). All covariates were measured at T_{pre} and continuous covariates were standardized on the T_{pre} mean and standard deviation. The results for the two models did not differ substantively. We therefore only report findings for Model 2. Because of the exploratory nature of these analyses, we deliberately abstained from over-interpreting effects for specific life domains or psychological outcomes. Instead, we focused on the broader picture afforded by the results of the statistical analyses. Analyses were conducted in R using the packages lme4 (Bates,

³ Specifically, the total number of models in the SOEP was $19 \text{ (event domains)} \times 7 \text{ (outcomes)} \times 2 \text{ (mean-level vs. rank-order change)} \times 2 \text{ (without vs. with covariates)} = 532$.

Mächler, Bolker, & Walker, 2015) and lmerTest (Kuznetsova, Brockhoff, & Christensen, 2016) for mixed models and emmeans (Lenth, 2018) to probe significant interactions.

Results

Prevalence of Missed Events

Across most events and in both samples, expected but missed events were more frequent than events (Table 2). To estimate the prevalence of missed events, we computed relative frequencies in reference to the total number of participants. In the SOEP-IS, this figure reflects the proportion of individuals experiencing a specific missed event in one specific wave (annual prevalence). In the LISS, this figure reflects the proportion of individuals experiencing a specific missed event anytime during their participation in this 10-year study (10-year prevalence), resulting in higher prevalence estimates than in the SOEP-IS. The 5 most common missed events in the SOEP-IS were death of a close relative (7.4%), job change (7.4%), better financial conditions (6.5%), permanent move within the country (5.6%), and entering a new relationship (5.1%). Five event domains were excluded from further analyses because the number of people experiencing the event (unexpectedly or expectedly) was less than $n = 30$: reconciliation with partner, divorce, temporary move within the country, death of partner, and temporary move abroad. To estimate how often people's expectations about upcoming major life events are unmet, we computed the relative frequencies of missed events in reference to the total number of participants who had expected the event (Table 2). These relative frequencies were above 50% for all events in both samples, indicating that people tend to overestimate the likelihood that a particular major life event will occur.

Table 2. Absolute and relative frequencies of missed events in both samples.

Sample / Domain	Absolute frequencies				Relative frequencies of missed events		
	Uneventful	Missed Event	Life as planned	Surprise	Both event groups	Relative to total sample size	Relative to total number of participants expecting the event
SOEP-IS							
New relationship	4334	245	75	127	202	5.1%	76.6%
Marriage	4571	139	42	37	79	2.9%	76.8%
Pregnancy	4571	168	12	20	32	3.5%	93.3%
Childbirth	4629	104	32	34	66	2.2%	76.5%
Separation from partner	4574	55	11	78	89	1.2%	83.3%
Reconciliation with partner	4511	61	1	7	8	1.3%	98.4%
Divorce	4576	60	6	7	13	1.3%	90.9%
Sickness or injury	4176	175	33	203	236	3.8%	84.1%
Death of partner	4432	36	2	22	24	0.8%	94.7%
Death of close relative	4021	337	30	188	218	7.4%	91.8%
Retirement	4263	139	58	38	96	3.1%	70.6%
Fired	4289	108	14	73	87	2.4%	88.5%
New job	3890	334	130	163	293	7.4%	72.0%
Promotion	4196	205	25	47	72	4.6%	89.1%
Better financial conditions	4424	309	16	38	54	6.5%	95.1%
Worsened financial conditions	4562	160	11	73	84	3.3%	93.6%
Permanent move within the country	4389	270	65	91	156	5.6%	80.6%
Temporary move within the country	4667	126	4	17	21	2.6%	96.9%
Temporary move abroad	4676	115	17	9	26	2.4%	87.1%
LISS							
Childbirth	3243	763	533	43	576	16.7%	58.9%
Unemployment	4785	479	261	256	517	8.3%	64.7%
New job	3043	673	377	203	580	15.7%	64.1%

Changes in SWB

The results for indicators of SWB (life satisfaction, affect balance, positive and negative affect) are summarized in Table 3. For the majority of the analyzed events and outcomes, there were no significant differences in rank-order or mean-level stability among the missed-event group, the event group, and the uneventful group. However, for those events for which effects were observed that met our thresholds of statistical significance ($p < .01$)

and minimum effect size ($\beta > |0.10|$ for rank-order stability, $d > |0.20|$ for mean-level change), the results for rank-order stability followed a consistent pattern: Rank-order stability was lower in the missed-event group than in the uneventful group. For the three events that were also available in the LISS, the results were similar for job change (see Figure 1) and job loss, but not for childbirth.

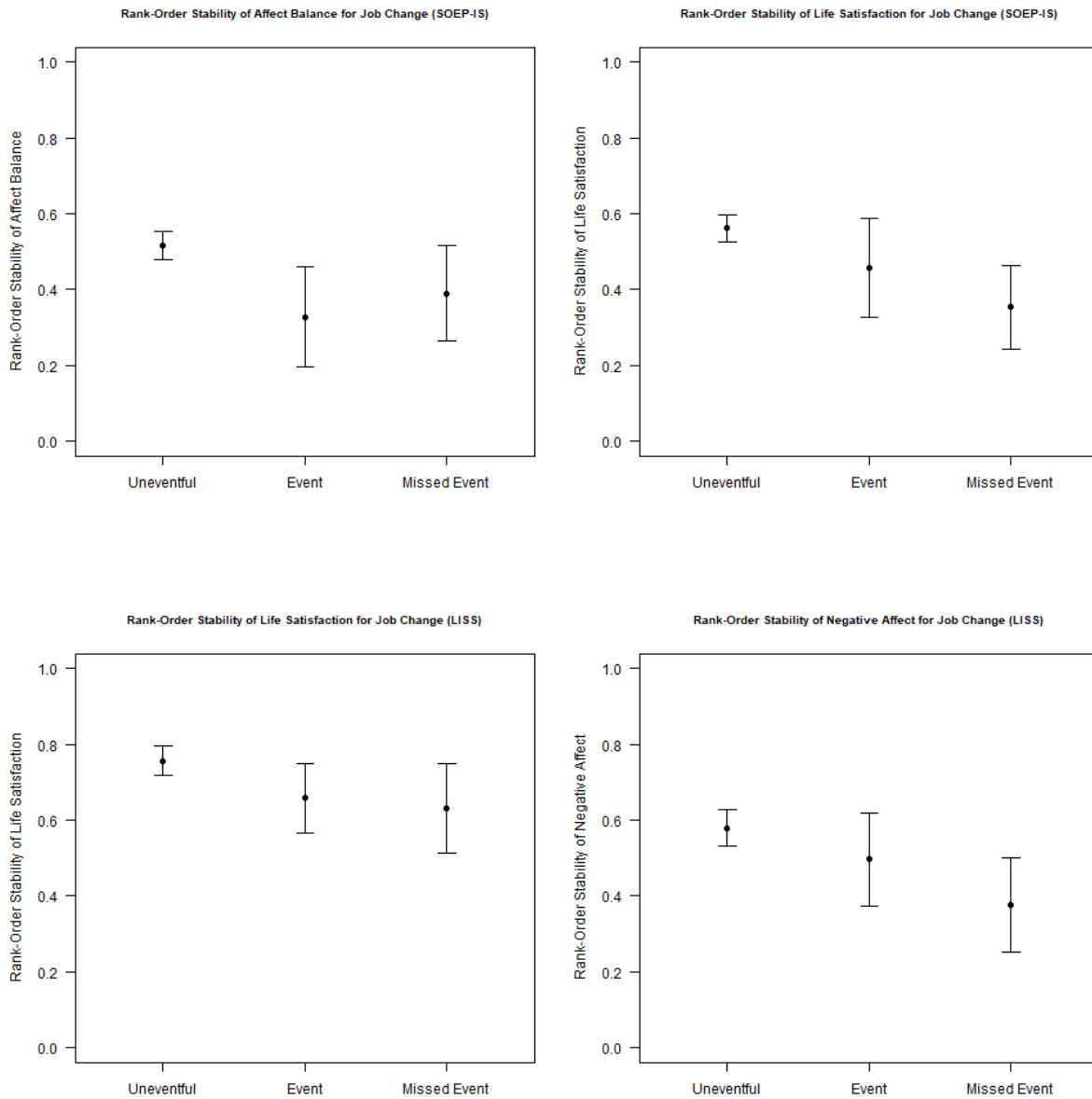


Figure 1. Rank-order stability of subjective well-being for job change in the SOEP-IS (top panels) and in the LISS (bottom panels). Error bars depict 99% confidence intervals.

With respect to mean-level change, the group differences did not reach our thresholds for statistical significance and minimum effect size for any SWB variable. However, for a number of events, we found significant group differences at T_{pre} (Table 3). The direction of these group differences was related to the desirability of the event. For undesirable events such as job loss, sickness or injury, or worsening financial conditions, SWB tended to be lower in the missed-event group than in the uneventful group. For desirable events such as pregnancy or marriage, SWB tended to be higher in the missed-event group than in the uneventful group. These pre-existing differences might reflect anticipation effects, that is, the expectation about the upcoming positive or negative event affects one's level of SWB in the present (e.g., Luhmann, Lucas, Eid, & Diener, 2013).

Changes in Big Five Personality Traits

Major life events tend to have weaker effects on the Big Five personality traits than on SWB (Denissen et al., 2019). This was also true in our data (Table 4). Regarding rank-order stability, not a single group difference that met our thresholds for statistical significance and minimum effect size was detected in the SOEP-IS, and only one statistically significant and sufficiently large effect was found in the LISS (for job change, rank-order stability of neuroticism was significantly lower in the missed-event group than in the uneventful group). Regarding mean-level change, two group differences for job change were statistically significant, but the effect sizes did not reach our threshold (Table 4). Overall, neither life events nor missed events accounted for any meaningful individual differences in rank-order stability or mean-level change of the Big Five.

Table 3. Rank-order stability and mean-level change in subjective well-being.

Outcome / Event	Rank-order stability		Mean-level change		
	Interaction group $\times T_{pre}$	Contrast Uneventful vs. Missed-Event Group	Interaction group \times time	Contrast Missed Event Pre-Post Difference vs. Uneventful Pre-Post-Difference	Contrast Missed Event T_{pre} Scores vs. Uneventful T_{pre} Scores
Affect Balance (SOEP-IS)					
Better financial conditions	$F(2, 4396) = 6.53, p = .001$	$\beta = 0.14, p = .013$	$\chi^2(2) = 5.05, p = .080$		$\beta = 0.11, p = .060$
Childbirth	$F(2, 4406) = 6.61, p = .001$	$\beta = -0.11, p = .407$	$\chi^2(2) = 0.09, p = .957$		$\beta = 0.17, p = .099$
Death of close relative	$F(2, 4203) = 5.33, p = .005$	$\beta = 0.16, p = .007$	$\chi^2(2) = 0.08, p = .960$		$\beta = -0.14, p = .012$
Job loss	$F(2, 4121) = 1.21, p = .299$		$\chi^2(2) = 0.62, p = .733$		$\beta = -0.27, p = .006$
Job change	$F(2, 4147) = 8.77, p < .001$	$\beta = 0.13, p = .033$	$\chi^2(2) = 0.33, p = .848$		$\beta = -0.08, p = .174$
Marriage	$F(2, 4397) = 2.06, p = .128$		$\chi^2(2) = 1.37, p = .505$		$\beta = 0.27, p = .002$
New relationship	$F(2, 4388) = 2.00, p = .135$		$\chi^2(2) = 7.00, p = .030$		$\beta = -0.09, p = .180$
Pregnancy	$F(2, 4378) = 1.25, p = .288$		$\chi^2(2) = 2.02, p = .364$		$\beta = 0.24, p = .003$
Promotion	$F(2, 4109) = 0.63, p = .533$		$\chi^2(2) = 0.74, p = .690$		$\beta = 0.16, p = .025$
Retirement	$F(2, 4126) = 1.65, p = .192$		$\chi^2(2) = 1.36, p = .507$		$\beta = -0.11, p = .201$
Separation from partner	$F(2, 4339) = 2.74, p = .065$		$\chi^2(2) = 6.42, p = .040$		$\beta = -0.26, p = .068$
Sickness or injury	$F(2, 4212) = 0.58, p = .559$		$\chi^2(2) = 4.31, p = .116$		$\beta = -0.68, p < .001$
Worsened financial conditions	$F(2, 4413) = 2.34, p = .096$		$\chi^2(2) = 4.65, p = .098$		$\beta = -0.41, p < .001$
Life Satisfaction (SOEP-IS)					
Better financial conditions	$F(2, 4680) = 6.39, p = .002$	$\beta = 0.10, p = .107$	$\chi^2(2) = 2.24, p = .326$		$\beta = 0.10, p = .079$
Childbirth	$F(2, 4691) = 4.69, p = .009$	$\beta = 0.21, p = .043$	$\chi^2(2) = 0.13, p = .938$		$\beta = 0.10, p = .283$
Death of close relative	$F(2, 4472) = 3.39, p = .034$		$\chi^2(2) = 4.41, p = .110$		$\beta = -0.18, p = .001$
Job loss	$F(2, 4383) = 1.96, p = .141$		$\chi^2(2) = 7.41, p = .025$		$\beta = -0.57, p < .001$
Job change	$F(2, 4415) = 12.39, p < .001$	$\beta = 0.21, p < .001$	$\chi^2(2) = 1.52, p = .467$		$\beta = -0.19, p = .001$
Marriage	$F(2, 4681) = 0.14, p = .865$		$\chi^2(2) = 1.35, p = .509$		$\beta = 0.09, p = .276$
New relationship	$F(2, 4674) = 1.05, p = .351$		$\chi^2(2) = 3.18, p = .204$		$\beta = -0.08, p = .208$
Pregnancy	$F(2, 4663) = 2.25, p = .106$		$\chi^2(2) = 5.04, p = .081$		$\beta = 0.21, p = .005$

Promotion	$F(2, 4373) = 1.54, p = .214$		$\chi^2(2) = 3.64, p = .162$		$\beta = 0.12, p = .068$
Retirement	$F(2, 4395) = 0.92, p = .399$		$\chi^2(2) = 5.17, p = .075$		$\beta = -0.24, p = .004$
Separation from partner	$F(2, 4618) = 7.71, p < .001$	$\beta = 0.34, p = .004$	$\chi^2(2) = 4.81, p = .090$		$\beta = -0.13, p = .334$
Sickness or injury	$F(2, 4481) = 1.09, p = .335$		$\chi^2(2) = 20.92, p < .001$	$\beta = 0.07, p < .001$	$\beta = -0.87, p < .001$
Worsened financial conditions	$F(2, 4699) = 0.39, p = .679$		$\chi^2(2) = 16.91, p < .001$	$\beta = 0.07, p < .001$	$\beta = -0.57, p < .001$
Positive affect (LISS)					
Childbirth	$F(2, 2237) = 3.91, p = .020$		$\chi^2(2) = 5.66, p = .059$		$\beta = 0.11, p = .024$
Job change	$F(2, 2706) = 3.03, p = .048$		$\chi^2(2) = 0.55, p = .760$		$\beta = 0.08, p = .166$
Job loss	$F(2, 3623) = 0.95, p = .387$		$\chi^2(2) = 1.36, p = .507$		$\beta = -0.16, p = .002$
Negative affect (LISS)					
Childbirth	$F(2, 2237) = 2.96, p = .052$		$\chi^2(2) = 0.66, p = .719$		$\beta = 0.10, p = .041$
Job change	$F(2, 2706) = 8.34, p < .001$	$\beta = 0.2, p < .001$	$\chi^2(2) = 12.54, p = .002$	$\beta = 0.06, p < .001$	$\beta = -0.10, p = .081$
Job loss	$F(2, 3623) = 0.92, p = .400$		$\chi^2(2) = 0.63, p = .729$		$\beta = 0.18, p = .001$
Life satisfaction (LISS)					
Childbirth	$F(2, 2658) = 0.63, p = .535$		$\chi^2(2) = 1.27, p = .530$		$\beta = 0.08, p = .093$
Job change	$F(2, 2941) = 6.05, p = .002$	$\beta = 0.13, p = .022$	$\chi^2(2) = 6.19, p = .045$		$\beta = 0.23, p < .001$
Job loss	$F(2, 4039) = 1.17, p = .312$		$\chi^2(2) = 3.76, p = .153$		$\beta = -0.28, p < .001$

Notes. Posthoc contrasts were computed only if the interaction was significant at $\alpha = .01$ and were adjusted for multiple comparisons. For rank-order stability, the standardized coefficient β reflects the difference in the correlation of T_{pre} and T_{post} between the missed-event group and the uneventful group, with positive values indicating that this correlation was stronger in the uneventful group. For mean-level change, the standardized coefficient β in the column Contrast Missed-Event Pre-Post Difference vs. Uneventful Pre-Post-Difference reflects the difference in the standardized mean difference ($T_{\text{post}} - T_{\text{pre}}$) between the missed-event group and the uneventful group, with positive values indicating that the standardized mean difference was more positive or less negative in the uneventful group. In the column Contrast Missed-Event T_{pre} Scores vs. Uneventful T_{pre} Scores, the standardized coefficient β reflects the standardized mean difference between the missed-event group and the uneventful group at T_{pre} .

Table 4. Rank-order stability and mean-level change in the Big Five personality traits.

Outcome / Event	Rank-order stability	Mean-level change		
	Interaction group $\times T_{pre}$	Contrast Uneventful vs. Missed-Event Group	Interaction group \times time	Contrast Missed Event Pre-Post Difference vs. Uneventful Pre-Post-Difference
Openness (SOEP-IS)				
Better financial conditions	$F(2, 3514) = 2.01, p = .134$		$\chi^2(2) = 2.75, p = .252$	$\beta = 0.21, p = .003$
Childbirth	$F(2, 3521) = 2.14, p = .118$		$\chi^2(2) = 2.17, p = .338$	$\beta = 0.12, p = .322$
Death of close relative	$F(2, 3376) = 0.12, p = .889$		$\chi^2(2) = 0.10, p = .951$	$\beta = -0.05, p = .414$
Job loss	$F(2, 3299) = 1.54, p = .215$		$\chi^2(2) = 0.07, p = .967$	$\beta = 0.09, p = .436$
Job change	$F(2, 3321) = 2.55, p = .078$		$\chi^2(2) = 0.86, p = .652$	$\beta = 0.08, p = .252$
Marriage	$F(2, 3512) = 0.41, p = .665$		$\chi^2(2) = 4.13, p = .127$	$\beta = 0.28, p = .011$
New relationship	$F(2, 3510) = 1.33, p = .264$		$\chi^2(2) = 6.87, p = .032$	$\beta = 0.26, p = .002$
Pregnancy	$F(2, 3498) = 0.10, p = .902$		$\chi^2(2) = 1.25, p = .536$	$\beta = -0.04, p = .668$
Promotion	$F(2, 3288) = 0.21, p = .812$		$\chi^2(2) = 0.32, p = .851$	$\beta = 0.15, p = .075$
Retirement	$F(2, 3300) = 0.57, p = .567$		$\chi^2(2) = 0.62, p = .735$	$\beta = 0.08, p = .434$
Separation from partner	$F(2, 3473) = 0.07, p = .933$		$\chi^2(2) = 6.32, p = .042$	$\beta = -0.16, p = .358$
Sickness or injury	$F(2, 3379) = 0.26, p = .774$		$\chi^2(2) = 6.67, p = .036$	$\beta = -0.23, p = .011$
Worsened financial conditions	$F(2, 3527) = 1.32, p = .267$		$\chi^2(2) = 0.81, p = .667$	$\beta = 0.09, p = .343$
Conscientiousness (SOEP-IS)				
Better financial conditions	$F(2, 3533) = 0.01, p = .989$		$\chi^2(2) = 1.04, p = .595$	$\beta = -0.03, p = .659$
Childbirth	$F(2, 3542) = 0.61, p = .541$		$\chi^2(2) = 0.53, p = .768$	$\beta = 0.04, p = .764$
Death of close relative	$F(2, 3391) = 0.52, p = .597$		$\chi^2(2) = 2.74, p = .255$	$\beta = -0.17, p = .007$
Job loss	$F(2, 3312) = 0.46, p = .632$		$\chi^2(2) = 0.16, p = .921$	$\beta = -0.08, p = .471$
Job change	$F(2, 3335) < 0.01, p = .997$		$\chi^2(2) = 6.98, p = .030$	$\beta = -0.11, p = .109$
Marriage	$F(2, 3532) = 0.80, p = .447$		$\chi^2(2) = 7.66, p = .022$	$\beta = 0.03, p = .811$
New relationship	$F(2, 3530) = 2.77, p = .063$		$\chi^2(2) = 2.00, p = .368$	$\beta = 0.02, p = .845$
Pregnancy	$F(2, 3518) = 0.97, p = .378$		$\chi^2(2) = 0.17, p = .917$	$\beta = 0.04, p = .679$

Promotion	$F(2, 3302) = 0.05, p = .955$	$\chi^2(2) = 1.25, p = .536$	$\beta = 0.20, p = .019$
Retirement	$F(2, 3313) = 1.30, p = .273$	$\chi^2(2) = 1.29, p = .523$	$\beta = -0.21, p = .040$
Separation from partner	$F(2, 3494) = 0.06, p = .940$	$\chi^2(2) = 1.90, p = .387$	$\beta = -0.49, p = .004$
Sickness or injury	$F(2, 3397) = 1.25, p = .286$	$\chi^2(2) = 5.68, p = .058$	$\beta = 0.01, p = .869$
Worsened financial conditions	$F(2, 3547) = 0.43, p = .649$	$\chi^2(2) = 4.10, p = .129$	$\beta = -0.27, p = .004$
Extraversion (SOEP-IS)			
Better financial conditions	$F(2, 3555) = 0.59, p = .552$	$\chi^2(2) = 2.47, p = .291$	$\beta = 0.15, p = .039$
Childbirth	$F(2, 3565) = 0.22, p = .804$	$\chi^2(2) = 8.51, p = .014$	$\beta = -0.16, p = .179$
Death of close relative	$F(2, 3412) = 0.36, p = .695$	$\chi^2(2) = 5.06, p = .080$	$\beta = -0.10, p = .139$
Job loss	$F(2, 3337) = 0.33, p = .720$	$\chi^2(2) = 1.86, p = .394$	$\beta = 0.01, p = .923$
Job change	$F(2, 3360) = 2.04, p = .130$	$\chi^2(2) = 11.02, p = .004$	$\beta = -0.11, p = .125$
Marriage	$F(2, 3555) = 0.17, p = .848$	$\chi^2(2) < 0.01, p = .999$	$\beta = 0.17, p = .114$
New relationship	$F(2, 3553) = 2.63, p = .072$	$\chi^2(2) = 3.15, p = .207$	$\beta = -0.02, p = .829$
Pregnancy	$F(2, 3541) = 0.31, p = .733$	$\chi^2(2) = 1.08, p = .584$	$\beta = -0.06, p = .538$
Promotion	$F(2, 3327) = 0.01, p = .994$	$\chi^2(2) = 0.09, p = .955$	$\beta = 0.19, p = .033$
Retirement	$F(2, 3337) = 0.68, p = .506$	$\chi^2(2) = 2.42, p = .297$	$\beta = 0.04, p = .671$
Separation from partner	$F(2, 3517) = 1.19, p = .304$	$\chi^2(2) = 8.64, p = .013$	$\beta = -0.17, p = .321$
Sickness or injury	$F(2, 3422) = 3.49, p = .031$	$\chi^2(2) = 0.85, p = .653$	$\beta = -0.12, p = .200$
Worsened financial conditions	$F(2, 3569) = 0.03, p = .973$	$\chi^2(2) = 3.30, p = .192$	$\beta = -0.03, p = .790$
Agreeableness (SOEP-IS)			
Better financial conditions	$F(2, 3549) = 3.34, p = .035$	$\chi^2(2) = 0.47, p = .792$	$\beta = 0.06, p = .411$
Childbirth	$F(2, 3560) = 1.29, p = .274$	$\chi^2(2) = 1.65, p = .439$	$\beta = 0.07, p = .578$
Death of close relative	$F(2, 3404) = 0.89, p = .410$	$\chi^2(2) = 6.39, p = .041$	$\beta = -0.15, p = .019$
Job loss	$F(2, 3332) = 3.70, p = .025$	$\chi^2(2) = 0.20, p = .905$	$\beta = 0.14, p = .243$
Job change	$F(2, 3354) = 0.63, p = .531$	$\chi^2(2) = 3.23, p = .199$	$\beta = -0.05, p = .446$
Marriage	$F(2, 3550) = 2.99, p = .050$	$\chi^2(2) = 5.97, p = .050$	$\beta = 0.22, p = .038$
New relationship	$F(2, 3548) = 2.15, p = .116$	$\chi^2(2) = 1.06, p = .589$	$\beta < 0.01, p = .990$
Pregnancy	$F(2, 3536) = 0.22, p = .803$	$\chi^2(2) = 1.89, p = .388$	$\beta = 0.13, p = .163$
Promotion	$F(2, 3321) = 2.42, p = .089$	$\chi^2(2) = 5.06, p = .080$	$\beta = 0.03, p = .723$
Retirement	$F(2, 3332) = 0.70, p = .496$	$\chi^2(2) = 3.10, p = .213$	$\beta = -0.02, p = .861$

Separation from partner	$F(2, 3512) = 0.17, p = .842$	$\chi^2(2) = 0.78, p = .678$	$\beta = -0.11, p = .522$
Sickness or injury	$F(2, 3414) = 0.13, p = .874$	$\chi^2(2) = 3.10, p = .213$	$\beta = 0.01, p = .936$
Worsened financial conditions	$F(2, 3563) = 1.20, p = .302$	$\chi^2(2) = 2.30, p = .317$	$\beta = -0.05, p = .607$
Neuroticism (SOEP-IS)			
Better financial conditions	$F(2, 3549) = 0.30, p = .739$	$\chi^2(2) = 0.21, p = .898$	$\beta = -0.06, p = .359$
Childbirth	$F(2, 3558) = 1.15, p = .316$	$\chi^2(2) = 0.95, p = .621$	$\beta = 0.07, p = .578$
Death of close relative	$F(2, 3406) = 0.49, p = .611$	$\chi^2(2) = 0.11, p = .949$	$\beta = 0.22, p = .001$
Job loss	$F(2, 3329) = 0.05, p = .956$	$\chi^2(2) = 1.03, p = .597$	$\beta = 0.26, p = .026$
Job change	$F(2, 3352) = 1.89, p = .151$	$\chi^2(2) = 5.56, p = .062$	$\beta = 0.03, p = .617$
Marriage	$F(2, 3548) = 0.80, p = .449$	$\chi^2(2) = 2.07, p = .355$	$\beta = 0.03, p = .799$
New relationship	$F(2, 3546) = 2.46, p = .086$	$\chi^2(2) = 0.77, p = .681$	$\beta = 0.01, p = .860$
Pregnancy	$F(2, 3534) = 0.08, p = .922$	$\chi^2(2) = 1.14, p = .566$	$\beta < 0.01, p = .992$
Promotion	$F(2, 3319) = 0.73, p = .481$	$\chi^2(2) = 1.54, p = .463$	$\beta = -0.1, p = .238$
Retirement	$F(2, 3330) = 2.53, p = .080$	$\chi^2(2) = 0.78, p = .678$	$\beta = 0.21, p = .041$
Separation from partner	$F(2, 3510) = 0.71, p = .491$	$\chi^2(2) = 2.74, p = .254$	$\beta = 0.06, p = .743$
Sickness or injury	$F(2, 3415) = 4.20, p = .015$	$\chi^2(2) = 8.58, p = .014$	$\beta = 0.47, p < .001$
Worsened financial conditions	$F(2, 3563) = 0.98, p = .377$	$\chi^2(2) = 5.66, p = .059$	$\beta = 0.25, p = .008$
Openness (LISS)			
Childbirth	$F(2, 2252) = 0.57, p = .567$	$\chi^2(2) = 3.47, p = .176$	$\beta = -0.03, p = .520$
Job change	$F(2, 2713) = 4.17, p = .016$	$\chi^2(2) = 2.12, p = .346$	$\beta = 0.20, p < .001$
Job loss	$F(2, 3639) = 0.37, p = .690$	$\chi^2(2) = 6.46, p = .039$	$\beta = -0.04, p = .412$
Conscientiousness (LISS)			
Childbirth	$F(2, 2252) = 1.52, p = .219$	$\chi^2(2) = 4.59, p = .101$	$\beta = 0.05, p = .300$
Job change	$F(2, 2713) = 3.72, p = .024$	$\chi^2(2) = 5.84, p = .054$	$\beta = 0.04, p = .526$
Job loss	$F(2, 3639) = 2.00, p = .136$	$\chi^2(2) = 6.74, p = .034$	$\beta = -0.13, p = .016$
Extraversion (LISS)			
Childbirth	$F(2, 2252) = 0.99, p = .370$	$\chi^2(2) = 0.29, p = .867$	$\beta = 0.13, p = .010$
Job change	$F(2, 2713) = 2.15, p = .117$	$\chi^2(2) = 1.13, p = .570$	$\beta = 0.36, p < .001$
Job loss	$F(2, 3639) = 1.30, p = .272$	$\chi^2(2) = 1.16, p = .559$	$\beta = -0.04, p = .440$
Agreeableness (LISS)			

Childbirth	$F(2, 2252) = 1.54, p = .214$		$\chi^2(2) = 4.95, p = .084$	$\beta = 0.04, p = .403$
Job change	$F(2, 2713) = 1.23, p = .293$		$\chi^2(2) = 0.29, p = .867$	$\beta = 0.13, p = .025$
Job loss	$F(2, 3639) = 2.07, p = .127$		$\chi^2(2) = 7.68, p = .021$	$\beta = -0.11, p = .031$
Neuroticism (LISS)				
Childbirth	$F(2, 2252) = 0.62, p = .539$		$\chi^2(2) = 0.08, p = .960$	$\beta < 0.01, p = .979$
Job change	$F(2, 2713) = 4.80, p = .008$	$\beta = 0.12, p = .006$	$\chi^2(2) = 14.13, p = .001$	$\beta = 0.04, p < .001$
Job loss	$F(2, 3639) = 0.57, p = .565$		$\chi^2(2) = 2.02, p = .365$	$\beta = -0.22, p < .001$
				$\beta = 0.15, p = .003$

Notes. Posthoc contrasts were computed only if the interaction was significant at $\alpha = .01$ and were adjusted for multiple comparisons. For rank-order stability, the standardized coefficient β reflects the difference in the correlation of T_{pre} and T_{post} between the missed event group and the uneventful group, with positive values indicating that this correlation was stronger in the uneventful group. For mean-level change, the standardized coefficient β in the column Contrast Missed event Pre-Post Difference vs. Uneventful Pre-Post-Difference reflects the difference in the standardized mean difference ($T_{\text{post}} - T_{\text{pre}}$) between the missed event group and the uneventful group, with positive values indicating that the standardized mean difference was more positive or less negative in the uneventful group. In the column Contrast Missed event T_{pre} Scores vs. Uneventful T_{pre} Scores, the standardized coefficient β reflects the standardized mean difference between the missed event group and the uneventful group at T_{pre} .

Similar to the findings for SWB, we found a number of significant group differences at T_{pre} . Previous research indicated that people high in neuroticism have higher expectations for negative events than people low in neuroticism (Zelenski & Larsen, 2002). Consistent with these findings, missed-event groups were characterized by higher levels of neuroticism than the uneventful groups for three undesirable events in the SOEP-IS (sickness or injury, death of a close one, worsening financial conditions); however, neuroticism did not account for any systematic group differences for any of the other undesirable events examined. Previous research also suggested that higher levels of extraversion might be associated with higher expectations for positive events (Zelenski & Larsen, 2002); however, systematic group differences for extraversion were only found in the LISS, but not in the SOEP-IS. Overall, it was difficult to detect a systematic pattern regarding the Big Five as predictors of pre-existing group differences.

Discussion

Missed events are major life events that were expected but did not occur within a specified time frame. Missed events are therefore a special case of violated expectations, which, according to several posttraumatic growth theories (Affleck & Tennen, 1996; Cann et al., 2010; Park, 2010; Tedeschi & Calhoun, 2004), may result in positive personality change. Hence, there is a clear conceptual argument in favor of integrating missed events in research on growth and personality development more generally. But is the study of missed events in these research fields also warranted from an empirical perspective? The answer to this question depends on which of our findings are emphasized.

A first main finding was that for all 19 event domains investigated here, life events that were expected but missed were more frequent than actually occurring life events. Considering how much attention researchers have paid to the effects of major life events on psychological outcomes, the relatively higher frequency of missed events would justify a more systematic investigation. A second main finding was that for a number of event

domains, the rank-order stability tended to be lower in the missed-event group than in the uneventful group, indicating that people within the missed-event group were more heterogeneous with respect to how much and in what direction they changed over time, with some experiencing decreases and others experiencing increases in the psychological outcome. A closer examination of the latter might be of particular relevance for research on growth because these people are the ones who experienced a positive personality change following a violation of their expectations. The lower rank-order stability in the missed-event group does not only indicate that missed events may have psychological consequences worth further investigation, it also has important implications for studies on specific major life events. Well-designed studies in this area often treat participants who had not experienced the event of interest as the comparison group in order to disentangle change due to the event from normative change (e.g., Denissen et al., 2019; Yap, Anusic, & Lucas, 2012). Our findings imply that the comparison group should be constructed more carefully, taking individual differences in expectations about future events into account.

In sum, these two main findings suggest that studying missed events, and people's expectations about future life events more generally, is a worthwhile route for future research on growth and personality development. However, a third main result was that for the majority of the investigated event domains and psychological outcomes, none of the crucial group comparisons met our thresholds for statistical significance and minimum effect size, particularly for mean-level change and for the Big Five. Of course, a non-significant effect does not mean that there is no effect; and it is possible that effects could have been detected if not for the specifications and limitations of our research design (see below). The more likely explanation, however, is that many missed events (and many life events for which we also did not find any significant effects) have little to no association with changes in the psychological outcomes investigated here.

Finally, the fourth main finding was that for a number of event domains, the event groups differed on the outcome variable even before the (missed) event, controlling for sociodemographic characteristics. Pre-existing differences between those who did not experience the event and those who did are consistent with the large and robust literature showing that personality (Soto, 2019) and SWB (Boehm, 2018; Warr & Nielsen, 2018) predict major life outcomes. Pre-existing differences between the uneventful group and the missed-event group indicate that the psychological outcomes investigated here might be systematically linked to people's expectations about the likelihood of at least some life events. For example, these psychological outcomes can be associated with people's general positive or negative outlook (e.g., high neuroticism is associated with a tendency to expect more negativity in life; Zelenski & Larsen, 2002), affect the likelihood of the event itself (e.g., people high in SWB are more likely to get married; Luhmann et al., 2013), or reflect group differences in third variables that are related to the subjective or objective likelihood of the event and to the psychological outcome.

Limitations and Implications for Future Research

This being the first, and therefore highly exploratory, comprehensive longitudinal study on missed events, we do not know to what extent our findings are generalizable to other samples or outcomes. However, as stated above, we believe that more research on missed events is merited. In future research, the following conceptual and methodological aspects need to be considered carefully.

First, the impact of missed events might depend on various event characteristics such as desirability or event domain. In our findings, desirability appeared particularly relevant to explain pre-existing group differences in SWB, with SWB being lower in the missed-event group than in the uneventful group for undesirable events and SWB being higher in the missed-event group than in the uneventful group for desirable events. It is possible that the mechanisms through which missed events lead to changes in psychological outcomes also

differ between undesirable and desirable events. Furthermore, missed events might have greater impact in domains that are perceived as particularly purposeful (e.g., having children) or existential (e.g., health) than in domains that are more mundane (e.g., relocating). Finally, these perceptions might vary between individuals such that a particular event might be perceived as more desirable or purposeful by some people than by others (Luhmann, Fassbender, & Alcock, 2019). Future research should therefore expand the range of (missed) events, systematically varying and measuring characteristics such as domain, likelihood or perceived desirability of the events

Second, the relevance of missed events might depend on the specific psychological outcome that is examined. It is possible that other outcomes that are typically studied in the growth literature (e.g., personal strengths, social relationships) change differently than SWB or the Big Five in response to missed events. Third, it is unclear to what extent our specific operationalization of expectations about future events might have influenced our findings. The SOEP-IS and LISS studies used different response scales, and this might have affected the relative frequency of missed events in the two samples. Furthermore, expectations were assessed with regard to the next year, which was appropriate because life events were assessed annually in both samples. However, this may not have been the optimal time frame for all event domains. For example, a 12-month time frame might be too short for a life event that typically comes with some advance notice (e.g., childbirth) and too long for a life event that cannot be predicted (e.g., accident). More generally, future research should investigate how expectations about future life events are formed in the first place and how they change over time as it becomes clearer that an expected event will not occur.

Fourth, an optimal study design would consist of multiple measurement occasions before and after the (missed) event to allow estimating nonlinear change (Infurna & Jayawickreme, 2019; Luhmann et al., 2014). Multiple measurement occasions before the (missed) events are necessary to be able to determine whether changes after the (missed)

events reflect a return to baseline (adaptation) or exceed baseline levels (growth) and to model potential anticipatory changes (Luhmann et al., 2013). The timing of the measurement occasions needs to be considered carefully. For some missed events, the effects on psychological outcomes might fade over time as people adapt to the permanent state of uncertainty, whereas the effects of other missed events might accumulate over time. Similarly, some psychological outcomes (e.g., SWB) might change more quickly in response to missed events, whereas others (e.g., Big Five personality traits) might change more slowly (Bleidorn et al., 2019) or, as sometimes suggested in the growth literature, after some delay (Tedeschi & Calhoun, 2004). Hence, there is no one-size-fits-all optimal research design but rather the design depends on the event domain and on the psychological outcome. Fifth, the use of two large and nationally representative samples was one of the major strengths of our study. However, even with such a comfortable database, the absolute number of individuals having experienced missed events was still rather small, resulting in reduced power to detect weak effects.

Finally, our study is mute with respect to the mechanisms through which missed events might be associated with psychological changes. As noted in the discussion, the consequences of missed events suggested by theories such as decision affect theory (Mellers et al., 2016) and theories of developmental regulation (Brandtstädter & Rothermund, 2002; Haase et al., 2013; Heckhausen et al., 2010) mirror those assumed to underlie growth. Specifically, missed events threaten one's expectations and hence one's core beliefs, and successfully coping with this threat may eventually result in growth (Cann et al., 2010; Jayawickreme & Blackie, 2014; Park, 2010). Future research on these mechanisms requires repeated measures of people's expectations and core beliefs.

Conclusion

Missed events are more common than life events and can be associated with significant changes in the rank order of SWB. However, more research is needed to

understand the conditions under which missed events are associated with change. Such research requires large samples, preferably even larger than those used here. Instead of collecting new data specifically to study missed events, a low-risk and low-cost strategy for the next steps would be to include items assessing the likelihood of specific future life events in ongoing longitudinal studies to expand the database for future research on missed events and growth.

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