Online supplemental material:

Affective well-being trajectories during the transition out of upper secondary education: A measurement burst study

Data Analyses

Hypothesis 1: Well-Being Trajectories During the Post-School Transition

Data from the global questionnaires of Wave 1–4 were used to investigate trajectories of global positive and negative affect during the post-school transition. Trajectories of global positive and global negative affect were investigated in one common model. In the following, the model part for global positive affect will be described in detail; the model part for global negative was equivalent, with the variable global positive affect replaced by global negative affect. Four latent factors were defined to investigate the trajectories of global positive affect during the post-school transition (PAW1, PAW2, PAW3, PAW4). These factors were indicated by one indicator each: the mean value of positive affect assessed in the global questionnaire at the respective measurement wave (Wave 1 for PAW1, Wave 2 for PAW2, Wave 3 for PAW3, and Wave 4 for PAW4). Factor loadings of the indicators on the latent variable were set to 1, the residual variances set to 0. The regression coefficients of the latent variables PAW2, PAW3, and PAW4 on the previous observation were constrained to 1. Three latent change variables, diffPA21 for the changes in global positive affect from Wave 1–2, diffPA32 for changes from Wave 2–3, and diffPA43 for changes from Wave 3–4, were defined. The change variable diffPA21 was determined by the latent variable PAW2, diffPA32 by PAT3, and diffPA43 by PAW3, all with a factor loading of 1. The variances and covariances of (a) the latent variable PAW1, and (b) all latent change variables were estimated. Additionally, the residual variances of the latent variables PAW2, PAW3, and PAW4 were constrained to 0. The mean of the latent variable PAW1 and the means of the latent change variables were estimated, while intercepts of latent variables of PAW2, PAW3, and PAW4, and the four observed variables were constrained to zero. Changes in global negative affect were implemented in the same model. Covariances

among the 8 latent variables whose variances were not fixed to zero (i.e., PAW1, diffPA21, diffPA32, diffPA43, as well as the four corresponding variables for NA, i.e., NAW1, diffNA21, diffNA32, diffNA43) were estimated.

Hypotheses 2: Differences Between Global and Daily Assessments.

Data from the global questionnaires and daily questionnaires of Wave 1–3 were used. Again, trajectories of daily positive and daily negative affect were examined in one common model. In the following, the model part for global positive affect and daily positive affect will be described in detail; the model part for global and daily negative affect was equivalent with the variable positive affect replaced by negative affect.

Three latent factors were defined for trajectories in *global positive affect* (PAW1, PAW2, PAW3). This was done in the same fashion as for H1, that is: Each latent factor was indicated by the mean value of positive affect assessed in the global questionnaire at the respective measurement wave. Factor loadings of the indicators on the latent variable were set to 1, the residual variances set to 0. The regressions of the latent variables PAW2 and PAW3 on the previous observation were constrained to 1. Two latent change variables, diffPA21 for changes in global positive affect from Wave 1–2, and diffPA32 for changes in global positive affect from Wave 2–3, were defined. The change variable diffPA21 was determined by the latent variable PAW2, diffPA32 by the latent variable PAW3. The variances and covariances of (a) the latent variable PAW1, and (b) the latent change variables were estimated. Additionally, the residual variances of the latent variables PAW2 and PAW3 were constrained to zero. The mean of the latent variable PAW1 and the means of the latent change variables were estimated, while intercepts of latent variables PAW2 and PAW3, and the four observed variables were constrained to zero.

The model part for trajectories of *daily positive affect* was equivalent to *global positive affect,* with the three latent factors indicated by the mean value of positive affect assessed in the *daily questionnaire* at the respective measurement wave.

Subsequently, four difference scores were defined: the difference between the mean of diffPA21 for the global measures and the diffPA21 for the daily measures, representing the difference in change of positive affect from Wave 1–2 for global vs. daily measures. Corresponding differences for differences between change from Wave 2–3, as well as differences for change in negative affect were included in the model.

Hypothesis 3: Motivation and Changes in Well-Being

Changes in Well-Being Between Wave 2 and 3. Data from Wave 1 (control variables), 2, and 3 from the global and the daily questionnaires were used. The effects of motivation on changes in global positive affect, daily positive affect, global negative affect, and daily negative affect were investigated in one common model.

For *global positive affect*, two latent factors were defined (PAW2, PAW3), with each factor indicated by the mean value of global positive affect. Factor loadings of the indicators on the latent variable were set to 1, the residual variances set to 0. The regression of the latent variable PAW3 on the previous observation was constrained to 1. One latent change variable (diffPA32) was defined, determined by the latent variable PAW3. The variances and covariances of (a) the latent variable PAW2, and (b) the latent change variable were estimated. Additionally, the variances of the latent variable PAW3 were constrained to zero. The mean of the latent variable PAW2 and the means of the latent change variable were estimated, while intercepts of latent variables of PAW3 and the two observed variables were not estimated.

The model part for *daily positive affect* was equivalent to global positive affect, with the two latent factors indicated by the (observed) mean value of *daily positive affect* (PAdailyW2, and PAdailyW3).

Both latent change variables, i.e., the difference in global positive affect between Wave 2 and 3 [diffPA32], and the difference in daily positive affect between Wave 2 and 3 [diffPAdaily32]) were predicted by autonomous and controlled motivation in Wave 2. Additionally, effects of (1) the socioeconomic status of participants' parents, (2) the financial situation, (3) the post-school pathway, and (4) the Big Five personality traits assessed in the global questionnaire were controlled for.

The model part for *global negative affect* was equivalent to the model part global positive affect, but the variable positive affect replaced by negative affect.

Last, the model part for *daily negative affect* was equivalent to the model global negative affect, with the two latent factors indicated by the (observed) mean value of *daily* positive affect.

Changes in Well-Being Between Wave 3 and 4. Data from Wave 1 and 2 (control variables), 3, and 4 from the global questionnaires were used. Again, the effects of motivation on changes in global positive affect and changes in global negative affect were investigated in one common model. In the following, the model part for global positive affect will be described in detail; the model part for global negative affect was equivalent, but the variable positive affect replaced by negative affect.

For *global positive affect*, two latent factors were defined (PAW3, PAW4), with each factor indicated by the (observed) mean value of global positive affect. Factor loadings of the indicators on the latent variable were set to 1, the residual variances set to 0. The regression of the latent variable PAW4 on the previous observation was constrained to 1. One latent change

variable (diffPA43) was defined, determined by the latent variable PAW4. The variances and covariances of (a) the latent variable PAW3, and (b) the latent change variable diffPA43 were estimated. Additionally, the variance of the latent variable PAW4 was constrained to zero. The means of (1) the latent variable PAW3, and (2) the latent change variable diffPA43 were estimated, while intercepts of the latent variable PAW4 and the two observed variables were not estimated.

The latent change variable, i.e., the difference in global positive affect between Wave 3 and 4 [diffPA43]) was predicted by autonomous and controlled motivation in Wave 3. Additionally, we controlled for the same variables as in the model for changes in well-being between Wave 2 and 3. The model part for the global negative affect was equivalent to the model part global positive affect, again with the variable positive affect replaced by negative affect.

Sensitivity Analyses

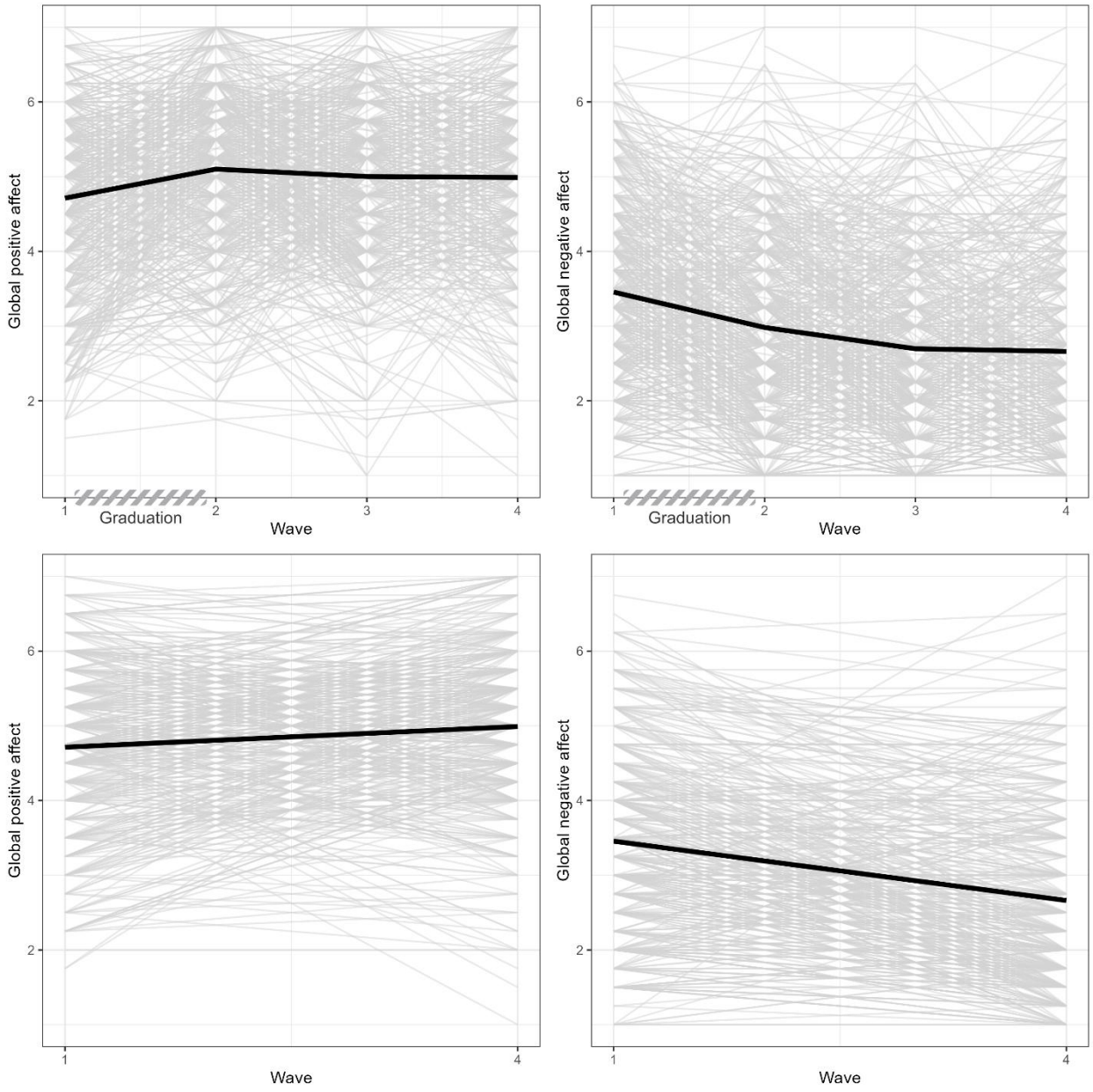
Hypothesis 1: Well-Being Trajectories During the Post-School Transition

We conducted sensitivity analyses for H1 in which we examined trajectories of global well-being from Wave 1–4 (two measurement waves included in the model), which is similar to the design used by Williams et al. (2015). We found that global positive affect significantly increased from Wave 1–4, $b = .27$ ($p < .001$)[1], $d = .22$, while global negative affect significantly decreased, $b = –.78$ ($p < .001$), $d = –.61$. The bottom row of Figure 1 depicts the trajectories of global positive (left) and global negative (right) affect from Wave 1 to Wave 4 in direct comparison to the trajectories considering Wave 2 and Wave 3, shown in the top row.

[1] One-sided p-values reported.

Figure 1

Comparison of global well-being trajectories with (upper row) and without (lower row) consideration of Wave 2 and 3



Note. $N = 803$. The gray lines depict the trajectories for each individual, the black lines depict the mean value for all participants. The grey shaded area on the x-axis indicates the period in which the participants graduated (the exact graduation date varied across individuals due to differences

in graduation dates between federal states in Germany). The upper row depicts global well-being trajectories from Wave 1–4 including Wave 2 and Wave 3 (see Figure 3 in the main body of the manuscript), while the bottom row depicts the trajectories of global well-being from Wave 1–4 considering only these points.

Hypothesis 3: Motivation and Changes in Well-Being

We additionally conducted sensitivity analyses for H3 using an index representing the degree of autonomous motivation. We therefore calculated an individual's motivation as (1) *1*intrinsic motivation + 1*identified motivation – 1*introjected motivation – 1*external motivation* (e.g., Hope et al., 2019; Sheldon et al., 2004), and (2) *2*intrinsic motivation + 1*identified motivation – 1*introjected motivation – 2* external motivation* (e.g., Litalien et al., 2013; Milyavskaya & Koestner, 2011; Sosin, Kramer, & Neubauer, 2024; Sosin & Neubauer, 2024. Motivation calculated as *1*intrinsic motivation + 1*identified motivation – 1*introjected motivation – 1*external motivation* did not predict changes in global positive affect, $b = .01$, $p = .196$, changes in daily positive affect, $b = .02$, $p = .042$, changes in global negative affect, $b = –.03$, $p = .029$, and changes in daily negative affect, $b = –.02$, $p = .062$, between Wave 2 and 3, nor changes in global positive affect, $b = –.02$, $p = .030$, and changes in global negative affect, $b = .01$, $p = .182$, between Wave 3 and 4.

Motivation calculated as *2*intrinsic motivation + 1*identified motivation – 1*introjected motivation – 2* external motivation* also did not affect changes in global and daily well-being: $b = .01$, $p = .179$, for changes in global positive affect between Wave 2 and 3, $b = .01$, $p = .040$, for changes in daily positive affect between Wave 2 and 3, $b = –.02$, $p = .035$, for changes in global negative affect between Wave 2 and 3, $b = –.01$, $p = .072$, for changes in daily negative affect between Wave 2 and 3, $b = –.02$, $p = .025$, for changes in global positive affect between

Wave 3 and 4, and $b = .01$, $p = .169$, for changes in global negative affect between Wave 3 and 4.

Next, controlling for the sample membership (original vs. refreshment sample) did not alter the conclusions drawn: Autonomous motivation for a post-school pathway was not linked to changes in global well-being between Wave 2 and 3, $b = .07$, $p = .098$, and between Wave 3 and 4, $b = .02$, $p = .359$. Additionally, autonomous motivation was not linked to changes in daily positive affect between Wave 2 and 3, $b = .01$, $p = .400$. Furthermore, controlled motivation for a post school pathway was not linked to changes in global negative affect between Wave 2 and 3, $b = .04$, $p = .109$, and between Wave 3 and 4, $b = .05$, $p = .136$, and not to changes in daily negative affect between Wave 2 and 3, $b = .07$, $p = .010$.

Last, after removing the Big Five personality traits from the analyses, all but one effect remained unchanged compared to the models including personality traits as covariates: The effect of controlled motivation on the difference variable daily negative affect between Wave 2 and 3 became significant, $b = .07$, $p = .009$. All other effects remained non-significant, with $b = .06$, $p = .095$ for autonomous motivation on changes in global positive affect between Wave 2 and 3, $b = .01$, $p = .363$ on changes in daily positive affect between Wave 2 and 3, and $b = .03$, $p = .262$ on changes in global positive affect between Wave 3 and 4; as well as $b = .06$, $p = .049$ for controlled motivation on changes in global negative affect between Wave 2 and 3, and $b = .04$ $p = .149$ on changes in global negative affect between Wave 3 and 4.

Hypothesis 4: Perceived Valence of Impacts of Experienced Life Events and Changes in Well-Being

In addition to the motivation for a post-school pathway, we investigated the links between the perceived valence of the impacts of moving out of home, ending a relationship, and

entering a new relationship and inter-individual differences in well-being trajectories. From the perspective of lifespan developmental psychology (Baltes et al., 2007), the effects of these life events on affective well-being are likely multidirectional, with each event carrying the potential for both gains and losses: Moving out of home, for example, often marks the beginning of independence, which can foster a sense of autonomy, but can also lead to feelings of loneliness or instability as young adults adjust to their new responsibilities. Ending a relationship can be associated with increased emotional stress, loss of social support, and a reorganization of personal identity, but positive consequences such as increased freedom are also conceivable. Entering a new relationship might also initially be associated with positive changes, such as emotional fulfillment and a strengthened support network, but new challenges might also come with starting a new relationship, such as balancing personal goals with the partner's needs. Individuals may differ in the perceived valence of the impact of these events, and a more nuanced understanding of well-being trajectories during the post-school transition may require consideration of how individuals perceive the life events they experience. We expected a more positive perceived impact of life events (i.e., moving out of home, ending a relationship, entering a new relationship) to be associated with a smaller decrease in well-being between Wave 2 and 3 (H4.1), and between Wave 3 and 4 (H4.2).

Participants were asked whether they had experienced any of 13 different life events since March 2023 (i.e., since the start of the ExTra study), including moving out of home, ending a relationship, and entering a new relationship that lasted at least 1 month in the global questionnaire in Wave 5 (based on Lüdtke et al., 2011). Participants registered for Wave 5 between May 03, 2024, and May 12, 2024 in the app, and the global questionnaire was sent out 30 seconds after registration was completed.

For those life events selected by the participants, they subsequently indicated when the event occurred (“between March and July 2023”, “between August and November 2023”, “between December 2023 and January 2024”, “after January 2024”; single choice answering format for each event), and what impact the event had on them (5-point Likert scale ranging from “very negative” to “very positive”). An overview of all assessed life events including the reported frequencies can be found in Table 1.

Table 1

Overview of all assessed life events including reported frequencies

Life event	experienced between	
	W2 and W3	W3 and W4
Changed accommodation	134	14
Moved out of home	131	10
Illness or injury of a family member	15	28
Entered a new relationship (lasting at least 1 month)	25	17
Broke off a relationship with a boyfriend/girlfriend	17	14
Own injury or illness	35	29
Illness or injury of a friend	11	7
Death of a family member	14	9
Failed an important exam	6	15
Death of a friend	1	2
Parents broke up or divorced	2	1
Got married	0	0
Other	11	19

Note. W2 – W4 = Wave 2 – Wave 4.

To investigate the links between these life events and inter-individual differences in well-being trajectories, the same models were set up as for motivation and changes in well-being. Three different models were used for the three life events moving out of home, ending a relationship, and entering a new relationship. The models were identical to the models for H3 with the difference that (a) autonomous/controlled motivation were removed as predictors, (b) one new predictor (the perceived valence of the impact of the life event) was added as a predictor of the change variables, and (c) the sample composition was different (participants were no longer excluded depending on their initial plans in Wave 2, but only those participants who reported the respective life event were included). Statistical significance was determined for the 18 unstandardized coefficients of the perceived valence of the impacts of the life events on positive and on negative affect using one-sided tests with an α-level of .01.

We were unable to run five of the pre-registered models given the unexpected small number of participants who reported the event. We therefore deviated from our pre-registration and excluded all covariates from the models. As can be seen in Table 2, in neither of the analyses was the perceived impact of the life events statistically significantly associated with changes in well-being, $| b | < .52$, $p > .014$ for all.

Table *2*

Effects of the perceived impact of moving out of home, ending a relationship, and entering a new relationship

Predictor	Positive affect			Negative affect		
	Changes from					
	W2 to W3	W2 to W3	W3 to W4	W2 to W3	W2 to W3	W3 to W4
	Assessment method					
	global	daily	global	global	daily	global
move	.21 (p = .014)	.17 (p = .017)	.24 (p = .273)	–.18 (p = .019)	–.04 (p = .273)	.01 (p = .493)
end	.02 (p = .469)	.04 (p = .407)	.12 (p = .241)	–.49 (p = .042)	.01 (p = .483)	.05 (p = .404)
start	.34 (p = .073)	.24 (p = .214)	.09 (p = .364)	–.52 (p = .029)	–.27 (p = .106)	–.28 (p = .139)

Note. Effects of the predictors were investigated in different models and results consequently refer to different subsamples (see Data Analysis section for details). One-sided p-values for unstandardized effects. W1–W4 = Wave 1 – Wave 4. Move = perceived valence of the impact of moving out of home, end = perceived valence of the impact of ending a relationship, start = perceived valence of the impact of entering a new relationship.

In addition to our pre-registered models, we tested whether the occurrence of a life event (vs. non-occurrence) was linked to well-being trajectories, with no significant links for the three life events analyzed. The results of these models can be found in Table 3. Additionally, Figures 2–7 compare the well-being trajectories of individuals who indicated that they have experienced a life event with those who have not.

However, analyses on the impact of the perceived valence of the impacts of moving out of home, ending a relationship, and entering a new relationship were limited by the small sample size. Hence, statistical power was low for these effects, limiting the reliability of the results. This small sample size of young adults experiencing these events seems quite unexpected, given that Arnett (2000) considered these events typical for this age group. However, Arnett (2000) referred to a broader age range, whereas the present study targeted the occurrence of these events in narrower time windows of 3–4 months. Consequently, the low base rates of these life events in the present study do not refute the possibility that emerging adults experience them frequently across several years. In addition, social and economic circumstances might also explain why these life events were observed less often than anticipated. For example, rising rent prices (e.g., Statista Research Department, 2024) may have led young adults to delay moving out of home (Federal Statistical Office of Germany, 2024). As a result, they might seek arrangements, such as distance learning, working from home, or commuting (Burrows & Burd, 2024), instead of relocating. These circumstances can also make it easier to maintain existing relationships, potentially resulting in delayed break-ups or the formation of new relationships.

Table 3

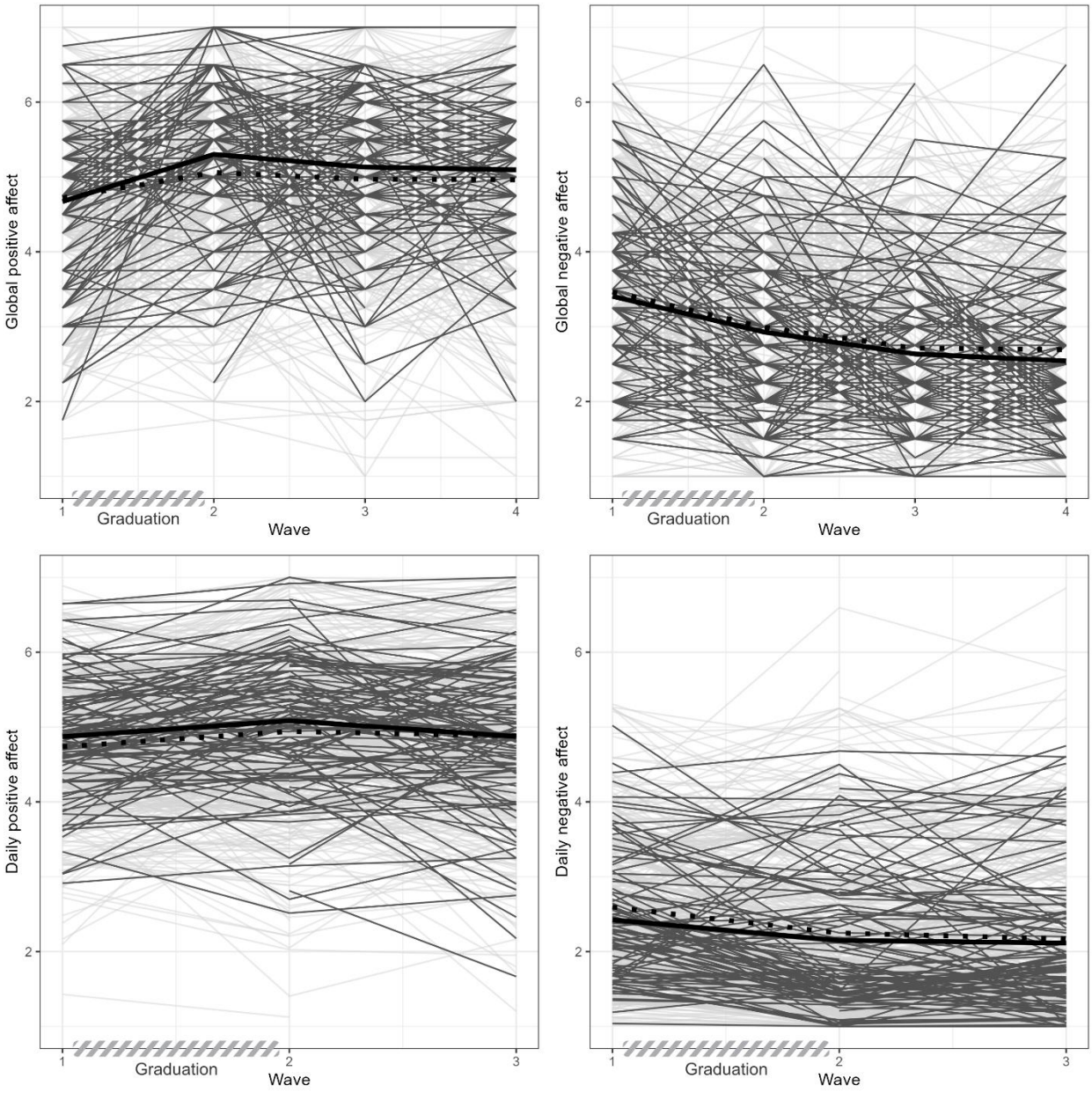
Effects of the occurrence of life events moving out of home, ending a relationship, and entering a new relationship

Predictor	Positive affect			Negative affect		
	Changes from					
	W2 to W3	W2 to T3	W3 to W4	W2 to W3	W2 to W3	W3 to W4
	Assessment method					
	global	daily	global	global	daily	global
move	.00 (p = .496)	.03 (p = .079)	.10 (p = .392)	–.12 (p = .375)	.01 (p = .467)	–.19 (p = .312)
end	–.23 (p = .180)	–.11 (p = .302)	–.50 (p = .037)	.25 (p = .147)	–.09 (p = 313)	.25 (p = .203)
start	.12 (p = .281)	–.09 (p = .298)	.22 (p = .232)	–.07 (p = .145)	–.05 (p = .368)	–.51 (p = .052)

Note. Effects of the predictors were investigated in different models and results consequently refer to different subsamples; specifically, we used the same models as in the analyses of our main hypotheses, replacing the predictor *perceived valence of the impact of the life event* with the *occurrence of a life event* (see Data Analysis section in the manuscript for details). Variables were coded 0 if the participant did not indicate that they had experienced the life event, 1 if they had. W2 – W4 = Wave 2 – Wave 4. One-sided p-values for unstandardized effects. Move = moving out of home, end = ending a relationship, start = entering a new relationship.

Figure 2

Comparison of well-being trajectories: Individuals who moved out of home between Wave 2 and Wave 3

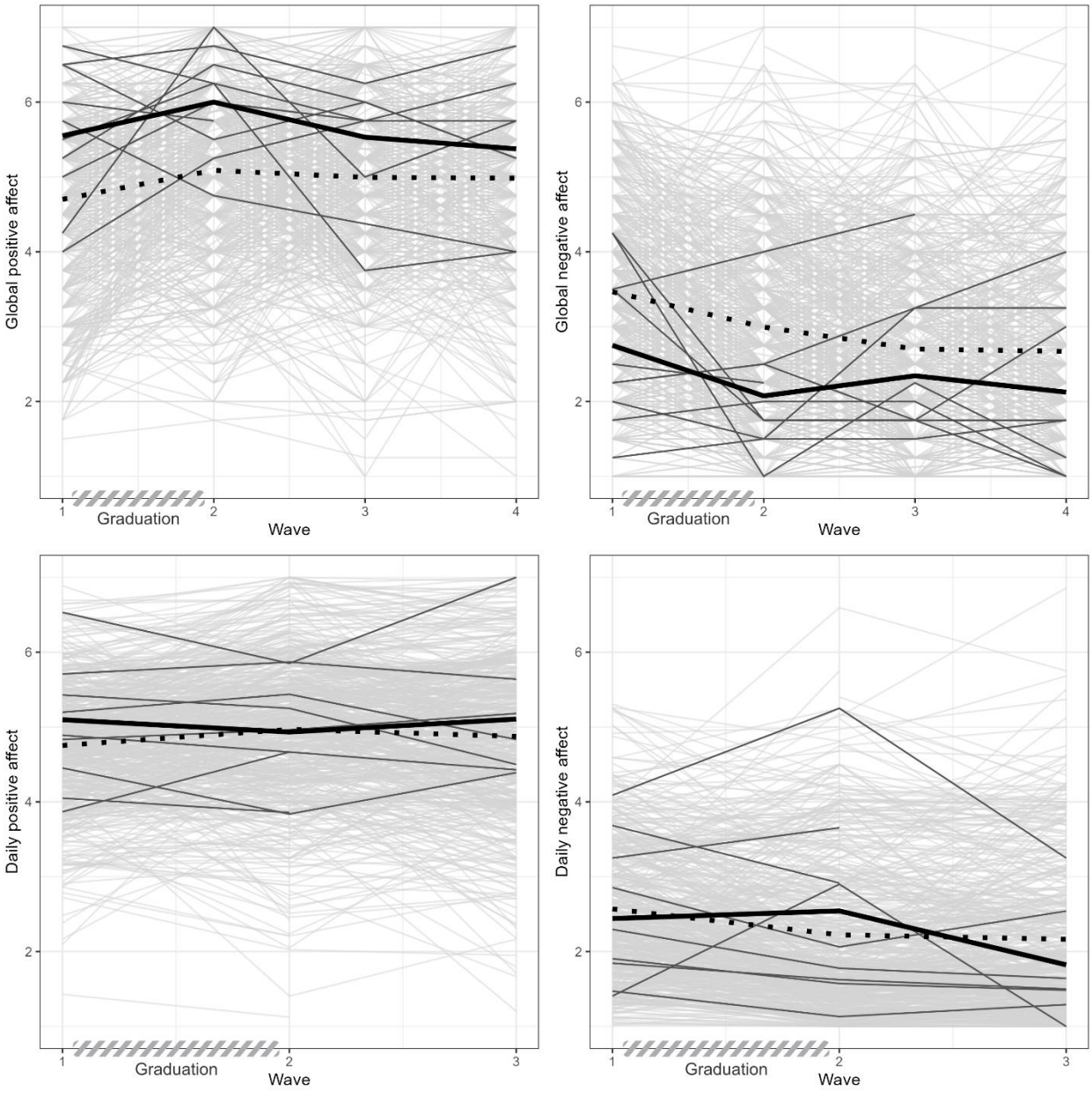


Note. The thin gray lines depict trajectories for participants who indicated that they had *not* experienced the life event, the thin black lines depict the trajectories for participants who indicated that they had experienced the life event. The dotted line depicts the mean value for participants who indicated that they had *not* experienced the life event, the thick black line

depicts the mean value for participants who indicated that they had experienced the life event. The grey shaded area on the x-axis indicates the period in which the participants graduated (the exact graduation date varied across individuals due to differences in graduation dates between federal states in Germany). The upper row depicts global well-being trajectories from Wave 1–4, while the bottom row depicts the trajectories of daily well-being from Wave 1–3.

Figure 3

Comparison of well-being trajectories: Individuals who moved out of home between Wave 3 and Wave 4

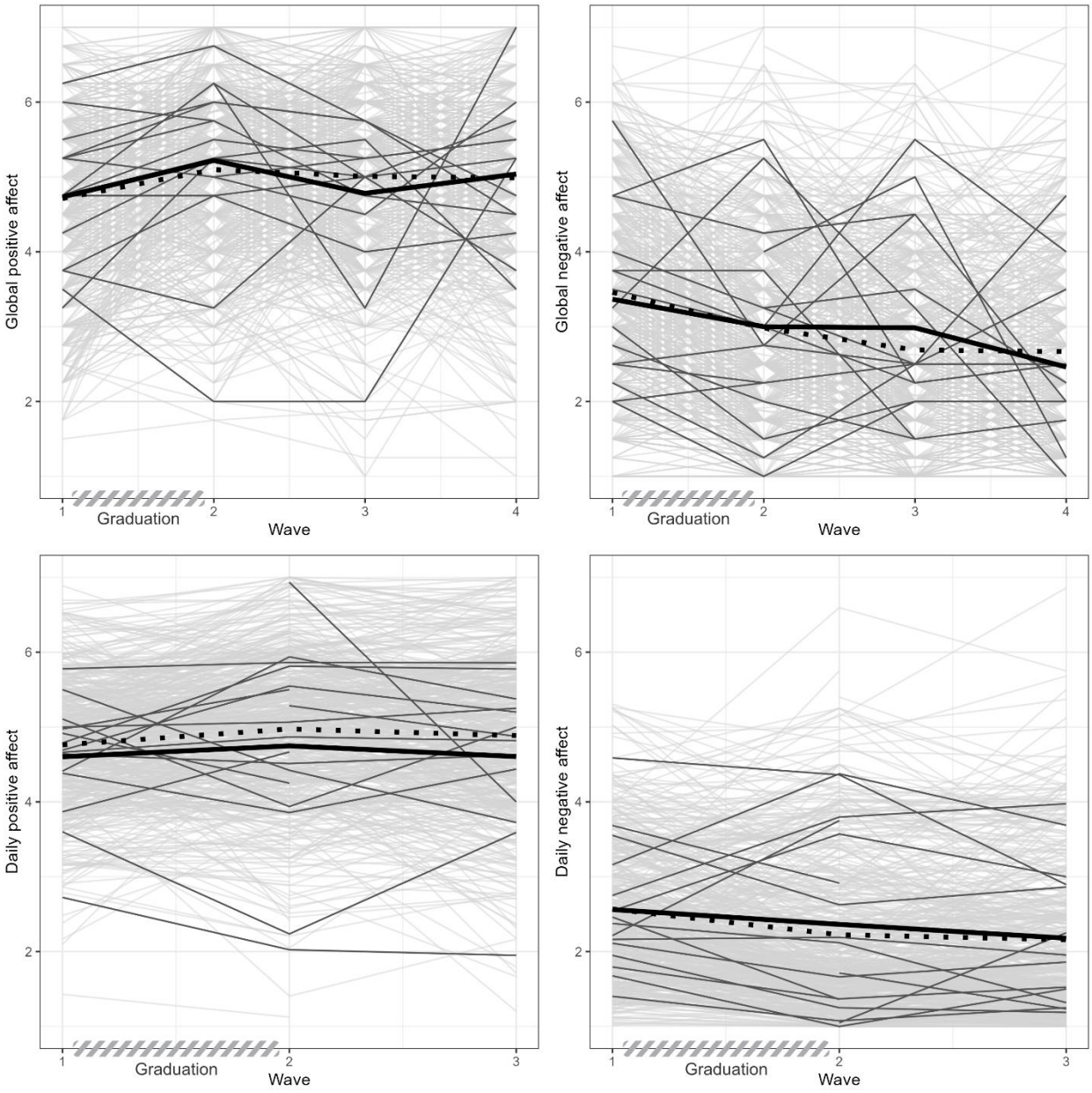


Note. The thin gray lines depict trajectories for participants who indicated that they had *not* experienced the life event, the thin black lines depict the trajectories for participants who indicated that they had experienced the life event. The dotted line depicts the mean value for

participants who indicated that they had *not* experienced the life event, the thick black line depicts the mean value for participants who indicated that they had experienced the life event. The grey shaded area on the x-axis indicates the period in which the participants graduated (the exact graduation date varied across individuals due to differences in graduation dates between federal states in Germany). The upper row depicts global well-being trajectories from Wave 1–4, while the bottom row depicts the trajectories of daily well-being from Wave 1–3.

Figure 4

Comparison of well-being trajectories: Individuals who ended a relationship between Wave 2 and Wave 3

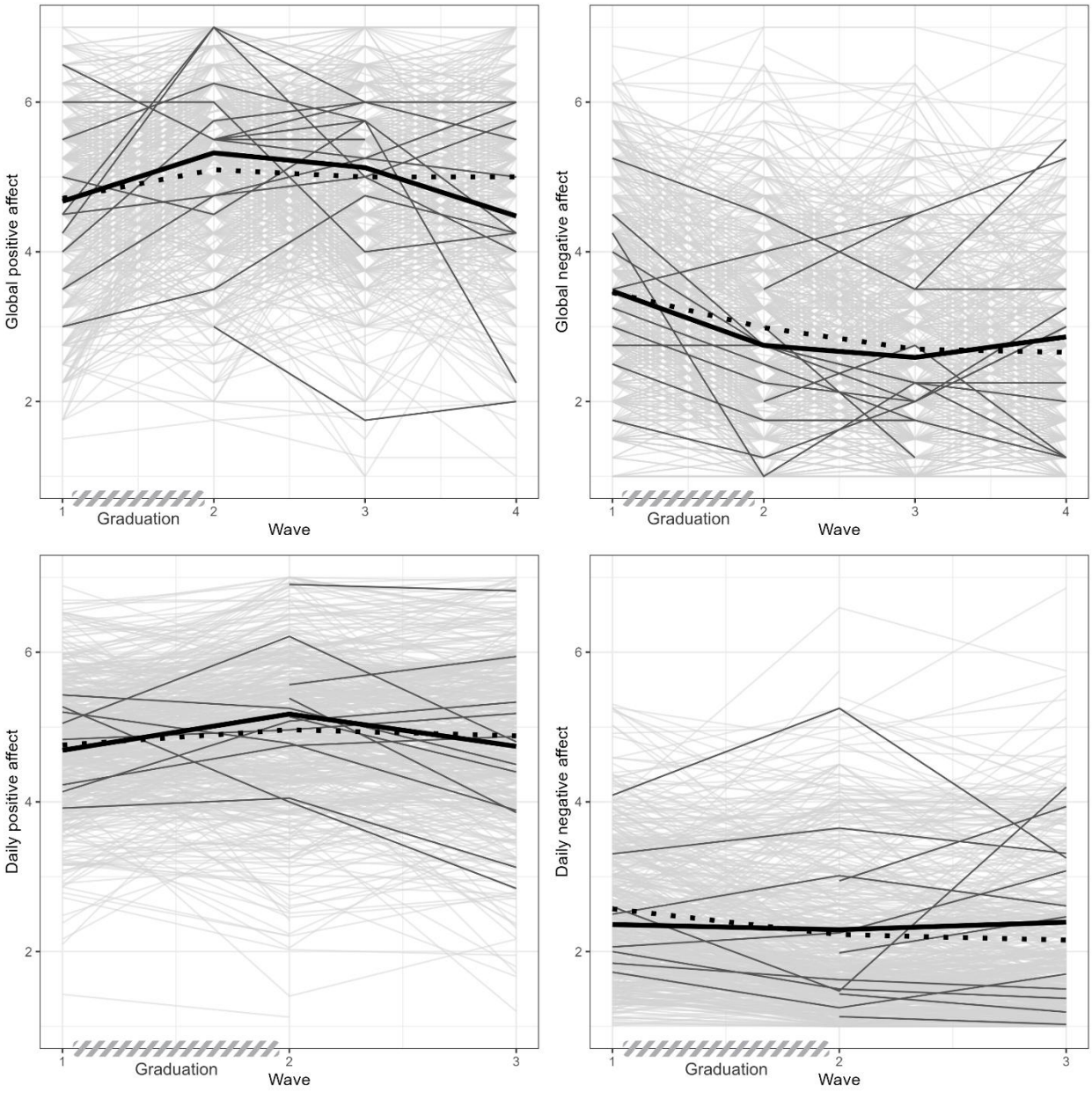


Note. The thin gray lines depict trajectories for participants who indicated that they had *not* experienced the life event, the thin black lines depict the trajectories for participants who indicated that they had experienced the life event. The dotted line depicts the mean value for

participants who indicated that they had *not* experienced the life event, the thick black line depicts the mean value for participants who indicated that they had experienced the life event. The grey shaded area on the x-axis indicates the period in which the participants graduated (the exact graduation date varied across individuals due to differences in graduation dates between federal states in Germany). The upper row depicts global well-being trajectories from Wave 1–4, while the bottom row depicts the trajectories of daily well-being from Wave 1–3.

Figure 5

Comparison of well-being trajectories: Individuals who ended a relationship between Wave 3 and Wave 4

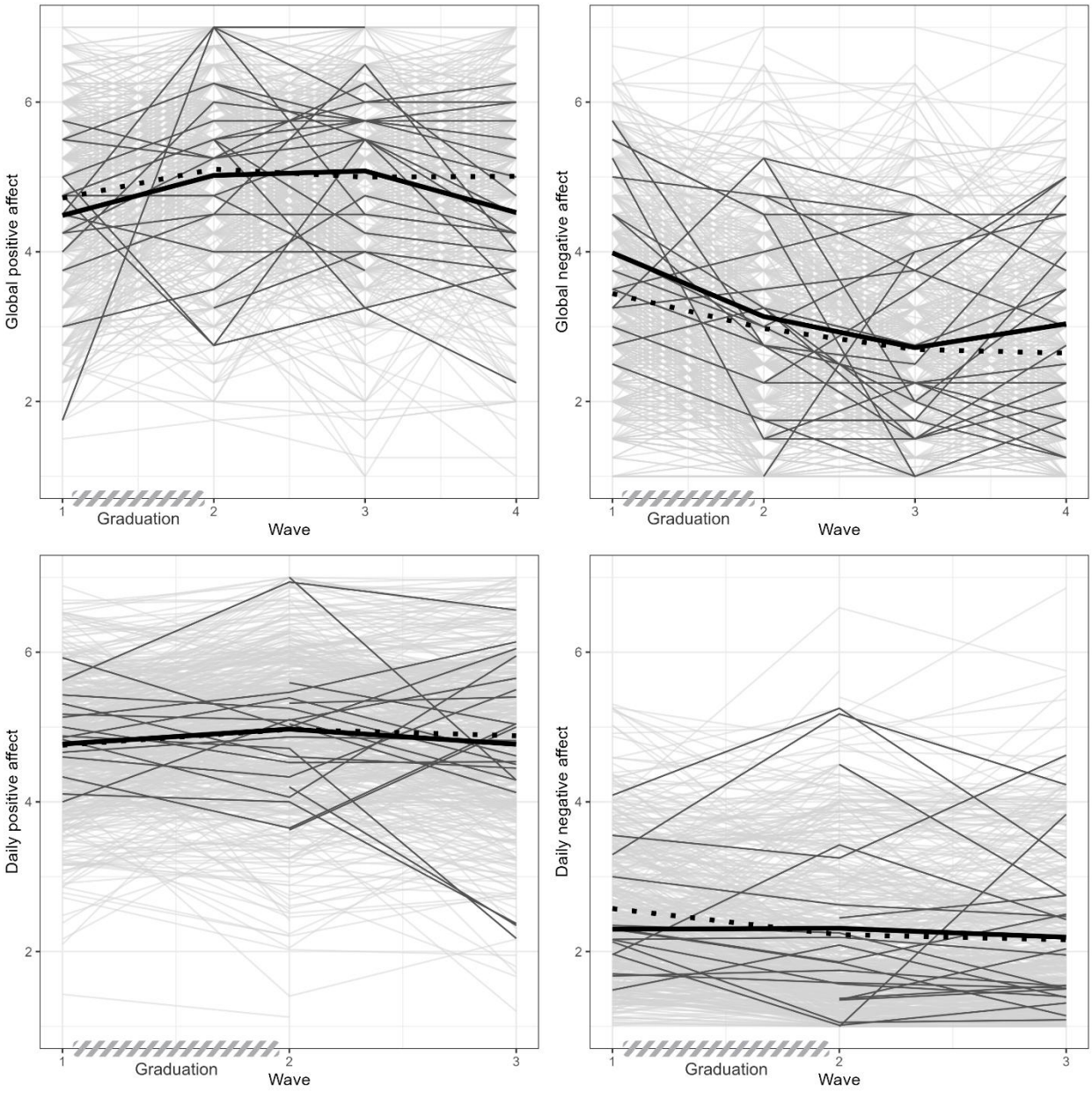


Note. The thin gray lines depict trajectories for participants who indicated that they had *not* experienced the life event, the thin black lines depict the trajectories for participants who indicated that they had experienced the life event. The dotted line depicts the mean value for

participants who indicated that they had *not* experienced the life event, the thick black line depicts the mean value for participants who indicated that they had experienced the life event. The grey shaded area on the x-axis indicates the period in which the participants graduated (the exact graduation date varied across individuals due to differences in graduation dates between federal states in Germany). The upper row depicts global well-being trajectories from Wave 1–4, while the bottom row depicts the trajectories of daily well-being from Wave 1–3.

Figure 6

Comparison of well-being trajectories: Individuals who entered a new relationship between Wave 2 and Wave 3

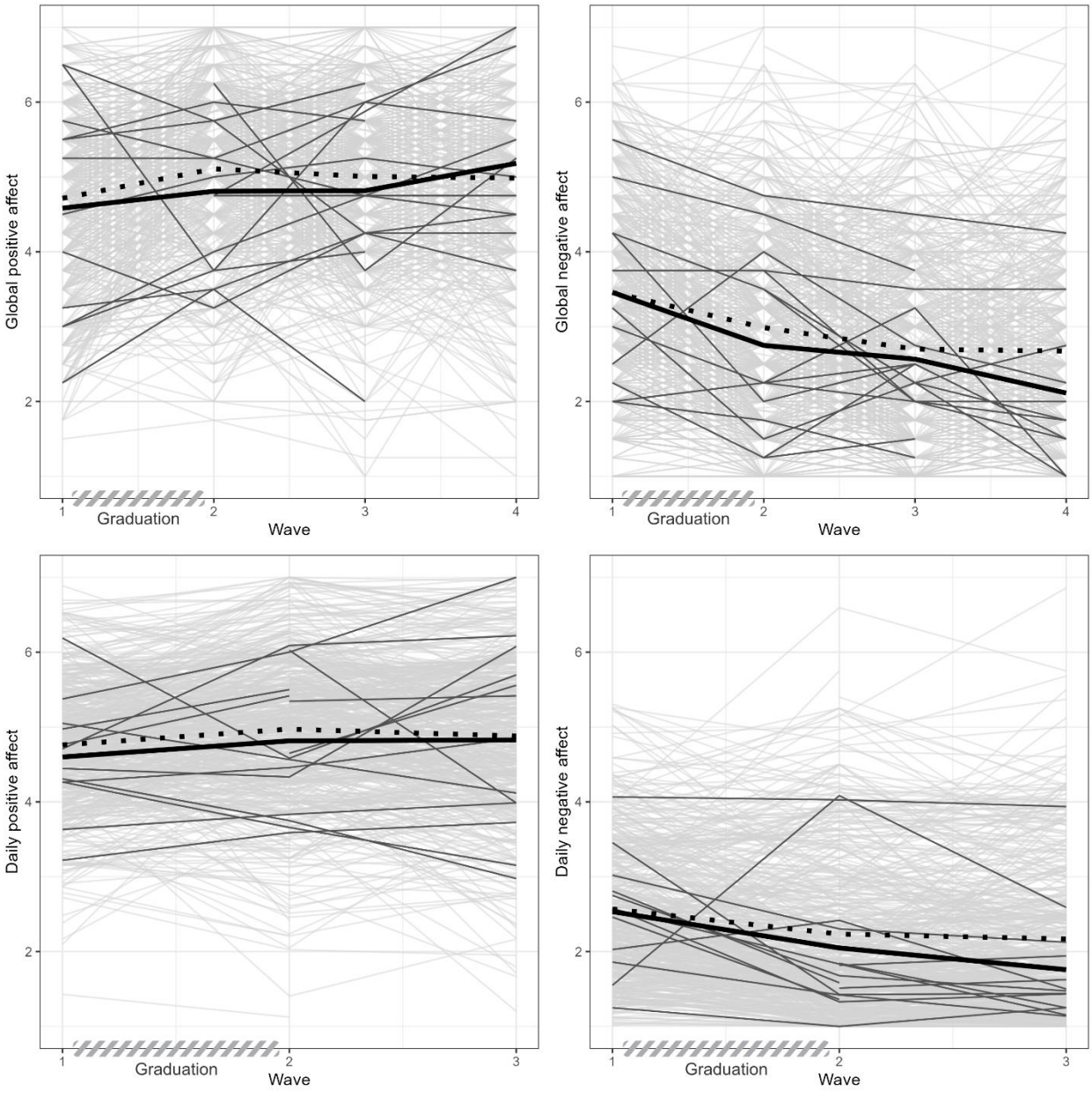


Note. The thin gray lines depict trajectories for participants who indicated that they had *not* experienced the life event, the thin black lines depict the trajectories for participants who indicated that they had experienced the life event. The dotted line depicts the mean value for

participants who indicated that they had *not* experienced the life event, the thick black line depicts the mean value for participants who indicated that they had experienced the life event. The grey shaded area on the x-axis indicates the period in which the participants graduated (the exact graduation date varied across individuals due to differences in graduation dates between federal states in Germany). The upper row depicts global well-being trajectories from Wave 1–4, while the bottom row depicts the trajectories of daily well-being from Wave 1–3.

Figure 7

Comparison of well-being trajectories: Individuals who entered a new relationship between Wave 3 and Wave 4



Note. The thin gray lines depict trajectories for participants who indicated that they had *not* experienced the life event, the thin black lines depict the trajectories for participants who indicated that they had experienced the life event. The dotted line depicts the mean value for

participants who indicated that they had *not* experienced the life event, the thick black line depicts the mean value for participants who indicated that they had experienced the life event. The grey shaded area on the x-axis indicates the period in which the participants graduated (the exact graduation date varied across individuals due to differences in graduation dates between federal states in Germany). The upper row depicts global well-being trajectories from Wave 1–4, while the bottom row depicts the trajectories of daily well-being from Wave 1–3.

References

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, *55*(5), 469–480. https://doi.org/10.1037/0003-066X.55.5.469

Baltes, P. B., Lindenberger, U., & Staudinger, U. M. (2007). Life span theory in developmental psychology. In W. Damon & R. M. Lerner (Eds.), *Handbook of Child Psychology* (pp. 581–664). Wiley. https://doi.org/10.1002/9780470147658.chpsy0111

Burrows, M., & Burd, C. (2024). *Commuting in the United States: 2022: American Community Survey Briefs.*

Federal Statistical Office of Germany. (2024). *Mehr als ein Viertel der 25-Jährigen wohnte 2023 noch im Haushalt der Eltern [More than a quarter of 25-year-olds were still living with their parents in 2023]*.

Hope, N. H., Holding, A. C., Verner-Filion, J., Sheldon, K. M., & Koestner, R. (2019). The path from intrinsic aspirations to subjective well-being is mediated by changes in basic psychological need satisfaction and autonomous motivation: A large prospective test. *Motivation and Emotion*, *43*(2), 232–241. https://doi.org/10.1007/s11031-018-9733-z

Litalien, D., Lüdtke, O., Parker, P., & Trautwein, U. (2013). Different pathways, same effects: Autonomous goal regulation is associated with subjective well-being during the post-school transition. *Motivation and Emotion*, *37*(3), 444–456. https://doi.org/10.1007/s11031-012-9328-z

Lüdtke, O., Roberts, B. W., Trautwein, U., & Nagy, G. (2011). A random walk down university avenue: Life paths, life events, and personality trait change at the transition to university

life. *Journal of Personality and Social Psychology*, *101*(3), 620–637. https://doi.org/10.1037/a0023743

Milyavskaya, M., & Koestner, R. (2011). Psychological needs, motivation, and well-being: A test of self-determination theory across multiple domains. *Personality and Individual Differences*, *50*(3), 387–391. https://doi.org/10.1016/j.paid.2010.10.029

Sheldon, K. M., Ryan, R. M., Deci, E. L., & Kasser, T. (2004). The independent effects of goal contents and motives on well-being: It's both what you pursue and why you pursue it. *Personality & Social Psychology Bulletin*, *30*(4), 475–486. https://doi.org/10.1177/0146167203261883

Sosin, A., Kramer, A. C., & Neubauer, A. B. (2024). Week-to-week fluctuations in autonomous study motivation: Links to need fulfillment and affective well-being. *Journal of Educational Psychology*, *116*(1), 36–47. https://doi.org/10.1037/edu0000811

Sosin, A., & Neubauer, A. B. (2024). Why we do what we do matters for how we feel: Links among autonomous goal regulation, need fulfillment, and well-being in daily life. *Journal of Personality and Social Psychology, 127*(5), 1103–1125. https://doi.org/10.1037/pspp0000522

Statista Research Department. (2024). *Consumer price index for net apartment rent and utilities in Germany from 1991 to 2022*. https://www.statista.com/statistics/1390352/apartment-rent-utilities-consumer-price-index-germany/

Williams, K. E., Ciarrochi, J., & Heaven, P. C. (2015). Relationships between valued action and well-being across the transition from high school to early adulthood. *The Journal of Positive Psychology*, *10*(2), 127–140. https://doi.org/10.1080/17439760.2014.920404

Table S1

Means, standard deviations, and group comparisons between original and refreshment sample for key variables

Variable	M (SD)		*t*(df)	*p*	*d*
	Original sample	Refreshment sample			
Global positive affect Wave 2	5.17 (1.05)	4.84 (1.15)	3.16(214.86)	.002	0.31
Global negative affect Wave 2	2.90 (1.21)	3.29 (1.18)	–3.60(233.36)	.000	–0.33
Global positive affect Wave 3	5.03 (1.08)	4.87 (1.13)	1.44(165.07)	.151	0.15
Global negative affect Wave 3	2.69 (1.20)	2.74 (1.17)	–0.45(173.77)	.657	–0.05
Global positive affect Wave 4	4.99 (1.07)	5.00 (1.27)	–0.11(117.37)	.913	–0.01
Global negative affect Wave 4	2.65 (1.23)	2.73 (1.23)	–0.61(129.05)	.545	–0.07
Daily positive affect Wave 2	4.95 (1.01)	5.05 (1.03)	–1.06(196.98)	.291	–0.11
Daily negative affect Wave 2	2.22 (1.06)	2.27 (1.05)	–0.45(201.48)	.654	–0.04
Daily positive affect Wave 3	4.90 (1.02)	4.79 (1.07)	0.96(150.67)	.340	0.11
Daily negative affect Wave 3	2.14 (1.02)	2.24 (1.02)	–0.89(155.04)	.376	–0.10
Autonomous motivation Wave 2	5.81 (0.95)	5.90 (0.92)	–0.87(149.31)	.385	–0.10
Controlled motivation Wave 2	3.14 (1.35)	3.00 (1.34)	0.91(147.05)	.366	0.10
Autonomous motivation Wave 3	5.58 (1.15)	5.57 (1.10)	0.10(175.81)	.924	0.01
Controlled motivation Wave 3	3.46 (1.29)	3.43 (1.55)	0.23(151.81)	.819	0.03

Note. Original sample coded as 0, refreshment sample coded as 1. Two-sided p-values for t-tests for independent samples.

Table S2

Means, standard deviations, and group comparisons between individuals who dropped out and those who did not for key variables

Variable	M (SD)		*t*(df)	*p*	*d*
	Dopped out	Did not drop out			
Global positive affect Wave 2	5.08 (1.12)	5.11 (1.06)	–0.33(492.68)	.742	–0.03
Global negative affect Wave 2	3.01 (1.20)	2.97 (1.22)	0.44(520.38)	.662	0.03
Global positive affect Wave 3	5.03 (1.16)	4.99 (1.07)	0.31(183.53)	.759	0.03
Global negative affect Wave 3	2.72 (1.15)	2.69 (1.21)	0.20(202.02)	.839	0.02
Global positive affect Wave 4	4.94 (1.11)	5.00 (1.11)	–0.34(57.02)	.734	–0.05
Global negative affect Wave 4	2.89 (1.25)	2.64 (1.23)	1.33(56.65)	.188	0.21
Daily positive affect Wave 2	4.88 (1.09)	5.00 (0.98)	–1.32(305.51)	0.186	–0.12
Daily negative affect Wave 2	2.41 (1.14)	2.15 (1.02)	2.66(302.04)	0.008	0.25
Daily positive affect Wave 3	4.84 (1.03)	4.89 (1.03)	–0.36(144.96)	0.718	0.04
Daily negative affect Wave 3	2.17 (1.02)	2.16 (1.02)	0.11(144.98)	0.914	0.01
Autonomous motivation Wave 2	5.90 (0.90)	5.81 (0.95)	0.91(136.64)	0.366	0.10
Controlled motivation Wave 2	3.13 (1.25)	3.11 (1.37)	0.12(140.21)	0.908	0.01
Autonomous motivation Wave 3	5.81 (1.03)	5.51 (1.16)	2.79(221.97)	0.006	0.26
Controlled motivation Wave 3	3.43 (1.35)	3.46 (1.34)	–0.26(200.66)	0.798	–0.03

Note. Individuals who dropped out coded as 0, those who did not coded as 1. Two-sided p-values for t-tests for independent samples.

Table S3

Overview of post-school pathways reported in Wave 3

Post-school pathway	*n*
Studying at a university	251
Dual study program	58
Apprenticeship	62
Voluntary social year, voluntary ecological year, something similar	103
Work & Travel	30
Au pair	8
Gap year	65
Something else	57

Table S4

Correlations for all variables including the perceived impact of experienced life events

No	Factor	R	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	PA_W1	1 – 7	4.71	1.11																	
2	PA_W2	1 – 7	5.10	1.08	.48																
3	PA_W3	1 – 7	5.00	1.09	.32	.44															
4	PA_W4	1 – 7	4.99	1.11	.34	.46	.57														
5	NA_W1	1 – 7	3.46	1.24	-.62	-.38	-.25	-.30													
6	NA_W2	1 – 7	2.98	1.21	-.43	-.59	-.35	-.37	.57												
7	NA_W3	1 – 7	2.70	1.19	-.34	-.35	-.62	-.46	.47	.56											
8	NA_W4	1 – 7	2.66	1.23	-.27	-.36	-.42	-.65	.46	.53	.63										
9	PAd_W1	1 – 7	4.76	0.86	.53	.54	.46	.50	-.40	-.42	-.33	-.34									
10	PAd_W2	1 – 7	4.97	1.02	.42	.54	.45	.48	-.32	-.37	-.33	-.35	.62								
11	PAd_W3	1 – 7	4.88	1.03	.41	.49	.54	.61	-.31	-.43	-.42	-.47	.55	.66							
12	NAd_W1	1 – 7	2.57	0.95	-.41	-.37	-.27	-.32	.58	.62	.56	.56	-.53	-.39	-.38						
13	NAd_W2	1 – 7	2.23	1.06	-.26	-.33	-.31	-.31	.36	.51	.56	.52	-.31	-.54	-.40	.61					
14	NAd_W3	1 – 7	2.16	1.02	-.26	-.36	-.36	-.46	.37	.50	.56	.68	-.31	-.39	-.53	.62	.74				
15	con_W2	1 – 7	3.11	1.35	-.11	-.12	-.16	-.20	.19	.24	.27	.29	-.13	-.14	-.21	.27	.24	.26			
16	con_W3	1 – 7	3.45	1.34	-.14	-.14	-.22	-.22	.22	.25	.34	.29	-.15	-.07	-.19	.28	.24	.21	.60		
17	aut_W2	1 – 7	5.82	0.94	.16	.27	.24	.20	-.15	-.15	-.18	-.16	.26	.28	.24	-.18	-.14	-.13	-.11	-.06	
18	aut_W3	1 – 7	5.58	1.14	.13	.21	.50	.31	-.11	-.13	-.32	-.24	.23	.29	.31	-.15	-.17	-.22	-.07	-.10	.57
19	ed_mom	1 – 8	4.81	1.95	.04	.04	.04	.03	-.07	-.07	-.09	-.03	-.02	.01	.00	-.03	-.09	-.09	-.02	-.09	.03

20	ed_dad	1 – 8	4.80	2.07	.05	-.00	.01	-.02	-.09	-.05	-.04	-.01	-.03	-.03	.01	-.03	-.05	-.08	.02	-.04	-.01
21	finance	1 – 5	4.02	0.98	.18	.23	.27	.18	-.22	-.18	-.29	-.18	.17	.17	.19	-.25	-.24	-.19	-.14	-.14	.03
22	dual	0 – 1	0.09	0.29	.11	.08	.08	.01	-.14	-.11	-.10	-.06	.13	.11	.06	-.10	-.08	-.04	-.02	-.00	.05
23	apprec	0 – 1	0.10	0.30	.07	.07	.02	.09	-.08	-.08	-.04	-.11	.05	.02	-.01	-.03	.00	-.05	-.00	-.00	-.08
24	volun	0 – 1	0.16	0.37	-.16	-.10	.02	.01	.13	.08	.01	.05	-.05	-.02	.00	.06	-.02	.04	-.14	-.11	-.12
25	wo&tr	0 – 1	0.05	0.21	.07	.04	.09	.15	-.07	-.06	-.08	-.11	.02	.03	.08	-.03	-.07	-.04	-.08	-.03	.08
26	aup	0 – 1	0.01	0.11	-.00	-.02	-.03	.06	-.07	-.02	.04	-.05	.02	-.06	-.08	-.04	-.02	-.02	-.02	-.06	.00
27	gap	0 – 1	0.10	0.30	.03	-.00	.02	.09	-.03	-.01	.02	.00	-.00	-.04	.07	-.02	.06	.03	-.02	-.15	-.00
28	oth	0 – 1	0.09	0.29	.03	.01	.00	-.05	.02	.00	-.01	.07	-.02	.04	.03	.01	-.03	-.03	-.07	.06	.07
29	extra	1 – 5	3.12	0.95	.35	.30	.17	.13	-.27	-.23	-.10	-.10	.22	.12	.17	-.09	-.02	-.05	-.09	-.08	.17
30	con	1 – 5	3.43	0.71	.21	.16	.14	.18	-.17	-.14	-.17	-.15	.13	.14	.14	-.13	-.11	-.08	-.09	-.03	.25
31	neuro	1 – 5	3.22	0.93	-.58	-.39	-.28	-.27	.63	.47	.38	.34	-.35	-.29	-.26	.40	.25	.26	.18	.17	-.06
32	agree	1 – 5	2.66	0.69	.25	.16	.12	.12	-.19	-.17	-.15	-.15	.16	.17	.16	-.15	-.09	-.07	-.06	-.05	.09
33	open	1 – 5	3.75	0.77	.06	-.00	-.03	-.02	.07	.12	.11	.11	-.01	-.00	.02	.12	.08	.07	.02	.08	.10

Note. PA = Global positive affect, NA = Global negative affect, PAe = Daily positive affect, NAe = Daily negative affect, con = controlled motivation, aut = autonomous motivation, ed_mom = mother's highest level of education, ed_dad = father's highest level of education, finance = financial situation, dual = dual study program, apprec = apprenticeship, volun = voluntary social year, voluntary ecological year, something similar, wo&tr = work & travel, aup = au pair, gap = gap year, oth = something else, extra = extraversion, con = consciousness, open = openness, agree = agreeableness, neuro = neuroticism, W1–W4 = Wave 1–4, R = Actually possible range.

Table S4 ***(continued)***

Correlations for all variables

No	Factor	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
19	ed_mom	-.00														
20	ed_dad	.01	.55													
21	finance	.13	.15	.15												
22	dual	.07	-.01	-.04	.06											
23	apprec	-.01	-.15	-.17	.00	-.10										
24	volun	.02	.03	.07	.03	-.14	-.15									
25	wo&tr	.12	.16	.09	.03	-.07	-.07	-.10								
26	aup	-.10	.00	.02	.04	-.04	-.04	-.05	-.03							
27	gap	-.10	-.01	-.01	.04	-.11	-.11	-.15	-.08	-.04						
28	oth	-.04	.05	.11	.11	-.10	-.10	-.14	-.07	-.04	-.11					
29	extra	.06	.07	.04	.14	.03	.03	-.06	.05	.09	.03	.03				
30	con	.13	-.02	-.04	.10	.09	-.02	-.08	.02	.01	-.08	.02	.16			
31	neuro	-.11	-.07	-.07	-.16	-.09	-.06	.14	-.10	.00	-.01	-.00	-.31	-.12		
32	agree	.04	.01	-.03	.08	.02	.06	.03	.01	-.05	.02	.03	.19	.10	-.11	
33	open	.05	.04	-.00	-.01	-.07	-.02	-.00	.05	-.05	.04	.07	.20	.07	.10	.14

Note. Ed_mom = mother's highest level of education, Ed_dad = father's highest level of education, finance = financial situation, dual = dual study program, apprec = apprenticeship, volun = voluntary social year, voluntary ecological year, something similar, wo&tr = work & travel, aup = au pair, gap = gap year, oth = something else, extra = extraversion, con = consciousness, open = openness, agree

= agreeableness, neuro = neuroticism.

Table S5

Correlations among change variables estimated in the model for testing H1

No	Factor	M	SD	2	3	4	5	6
1	Change PA W1 – W2_base	0.43	0.04	–.36	.02	–.43	.16	–.10
2	Change PA W2 – W3_base	–0.11	0.05		–.45	.11	–.52	.24
3	Change PA W3 – W4_base	–0.02	0.05			.03	.19	–.53
4	Change NA W1 – W2_base	–0.51	0.05				–.38	–.01
5	Change NA W2 – W3_base	–0.27	0.05					–.40
6	Change NA W3 – W4_base	–0.04	0.05					

Note. $N = 86$. W1–W4 = Wave 1–4.

Table S6

Correlations among change variables estimated in the model for testing H2

No	Factor	M	SD	2	3	4	5	6	7	8
1	Change PA W1 – W2_base	0.43	0.04	–.36	–.43	.15	.15	–.07	–.12	–.05
2	Change PA W2 – W3_base	–0.13	0.05		.10	–.51	–.02	.17	–.07	–.02
3	Change NA W1 – W2_base	–0.50	0.05			–.37	–.07	–.08	.17	–.00
4	Change NA W2 – W3_base	–0.25	0.05				–.06	–.05	.13	.02
5	Change PA W1 – W2_daily	0.24	0.04					–.41	–.51	.26
6	Change PA W2 – W3_daily	–0.12	0.04						.19	–.48
7	Change NA W1 – W2_daily	–0.32	0.04							–.44
8	Change NA W2 – W3_daily	–0.04	0.03							

Note. N = 861. W1–W4 = Wave 1–4

Table S7

Full model results for the model for testing H3

Predictor	Positive affect			Negative affect		
	Changes from					
	W2 to W3	W2 to W3	W3 to W4	W2 to W3	W2 to W3	W3 to W4
	Assessment method					
	global	daily	global	global	daily	global
aut	.07 (p = .097)	.01 (p = .432)	.02 (p = .358)	–.05 (p = .136)	.02 (p = .307)	.05 (p = .138)
con	–.00 (p = .480)	–.06 (p = .028)	.06 (p = .058)	.05 (p = .076)	.06 (p = .014)	.06 (p = .109)
ed_mom	.02 (p = .294)	–.01 (p = .289)	.01 (p = .427)	–.04 (p = .067)	–.01 (p = .411)	.01 (p = .363)
ed_dad	.01 (p = .373)	.02 (p = .174)	–.02 (p = .293)	.02 (p = .247)	–.00 (p = .457)	.01 (p = .330)
finance	.13 (p = .005)	.01 (p = .406)	–.04 (p = .194)	–.12 (p = .005)	.04 (p = .170)	.04 (p = .235)
dual	–.03 (p = .437)	–.11 (p = .212)	.10 (p = .278)	.04 (p = .395)	.08 (p = .262)	–.18 (p = .170)
apprec	.22 (p = .079)	–.10 (p = .221)	.14 (p = .205)	–.13 (p = .205)	.01 (p = .483)	.20 (p = .145)
volun	.28 (p = .015)	.01 (p = .459)	.35 (p = .006)	–.09 (p = .240)	.06 (p = .288)	.07 (p = .316)

wo&tr	.33 (p = .051)	.22 (p = .101)	.97 (p < .001)	–.10 (p = .311)	.16 (p = .170)	–.46 (p = .028)
aup	–.43 (p = .146)	–.40 (p = .119)	1.35 (p < .001)	.54 (p = .088)	.16 (p = .305)	–1.00 (p = .009)
gap	.12 (p = .244)	.24 (p = .050)	.47 (p = .005)	–.09 (p = .290)	–.11 (p = .212)	.14 (p = .245)
oth	.05 (p = .392)	–.05 (p = .367)	–.07 (p = .370)	–.20 (p = .148)	–.09 (p = .263)	.11 (p = .312)
extra	–.06 (p = .137)	.02 (p = .349)	–.04 (p = .258)	.13 (p = .006)	.02 (p = .294)	.05 (p = .224)
con	.08 (p = .140)	.03 (p = .283)	.14 (p = .032)	–.13 (p = .025)	–.04 (p = .236)	–.04 (p = .315)
neuro	–.00 (p = .483)	.00 (p = .488)	–.03 (p = .287)	.07 (p = .099)	.02 (p = .312)	.01 (p = .429)
agree	–.01 (p = .446)	.09 (p = .060)	.09 (p = .119)	–.15 (p = .012)	–0.03 (p = .298)	–.10 (p = .108)
open	–.05 (p = .209)	–.06 (p = .102)	.05 (p = .229)	.12 (p = .016)	.01 (p = .455)	–.03 (p = .337)

Note. One-sided p-values for unstandardized effects. W1–W4 = Wave 1–4. Aut = autonomous motivation, con = controlled motivation. ed_mom = mother's highest level of education, ed_dad = father's highest level of education, finance = financial situation, dual = dual study program, apprec = apprenticeship, volun = voluntary social year, voluntary ecological year, something similar, wo&tr = work & travel, aup = au pair, gap = gap year, oth = something else, extra = extraversion, con = consciousness, open = openness, agree = agreeableness, neuro = neuroticism