

A Multi-Occasion Multi-Rater Model of Affective Dispositions and Affective Well-Being

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Abstract Personality theories assume that affective dispositions have a strong influence on affective experience and well-being, produce cross-situational consistency, and that positive and negative experiences are influenced by separate dispositions. These assumptions were tested using multi-method data. 97 married couples completed self and informant ratings of affective dispositions, a 14-day experience sampling study, and retrospective self and informant ratings of affective experiences (overall and with spouse). Analysis was conducted using a multi-trait-multi-method matrix and structural equation modeling. Main findings were (a) strong effects of affective dispositions on affective experiences with partner and affective well-being, (b) shared method variance among disposition and well-being ratings by the same rater, and (c) moderate to strong negative correlations between dispositions for positive and negative affect.

Keywords Affective dispositions · Affective experiences · Multi-trait-multi-method · Subjective well-being · Positive affect · Negative affect

1 Introduction

Experiences of positive affect and negative affect not only make people's lives more interesting, they also contribute to their subjective well-being (Diener 1984; Schimmack et al. 2002a, b). Given the importance of affect in people's lives, it is no surprise that affective experiences have emerged as an important topic in personality psychology (Diener 1999). Key findings in the personality literature on affect suggest that affective experiences are influenced by broad personality traits, especially extraversion and neuroticism (Costa and McCrae 1980), that affective dispositions are heritable (Lykken and Tellegen 1996), and that affective dispositions produce cross-situational consistency in affective experiences (Diener and Larsen 1984; Oishi et al. 2004).

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One major limitation of prior studies is the almost exclusive reliance on concurrent self-ratings of personality and affective well-being to test the influence of affective dispositions on well-being. One limitation of this approach is that self-report measures of affective dispositions and well-being have only moderate validity (Schimmack 2010; Schneider and Schimmack 2009). As a result, effect size estimates in these studies could severely underestimate the influence of affective dispositions on well-being (Schimmack 2010). On the other hand, shared method variance can produce spurious evidence for the influence of personality dispositions on well-being and inflate estimates of cross-situational consistency.

Another limitation of previous studies is the lack of a clear distinction between affective dispositions and affective well-being. We define affective dispositions as internal dispositions that influence individuals' affective experiences. Affective well-being is defined as the amount of positive versus negative experiences that individuals experience over a defined period of time (Diener et al. 1991; Flügel 1925; Kahneman 1999). Our distinction between affective dispositions and affective well-being is akin to the distinction between personality dispositions and act frequencies (Funder 1991; Schimmack 2010). Personality dispositions are by definition internal factors that are independent of situational factors. In contrast, act frequencies are influenced by personality dispositions and situational factors. For example, even individuals with an extraverted disposition need social situations to act in an extraverted manner (e.g., dominance, talkativeness). Similarly, affective well-being can be influenced by internal dispositions and situational factors. For example, the amount of positive affect experienced over a period of time may be a function of dispositional extraversion, number of social situations, and an interaction between the two.

To clarify our distinction between affective dispositions and affective well-being further, it is helpful to compare it to the common distinction between trait affect and state affect (Diener et al. 1995; Eid 1995; Steyer et al. 1999). The term trait is sometimes used to refer to dispositions and sometimes used to refer to long-term averages (Funder 1991). In studies with multi-method data, traits are typically identified with a latent factor that is assumed to have a causal effect on observed indicators (Eid 1995; Schimmack 2010). Based on this conceptualization of traits, our notion of affective dispositions is equivalent to the notion of trait affect.

State affect is commonly used to refer to affective experiences at one moment in time. Measures of state affect typically ask participants to report how they feel right now. Affective well-being is an aggregate (e.g., an average) of these momentary experiences over a defined period of time. Studies of affective well-being typically examine time periods ranging from a day to a couple of months. Given our definition of affective well-being as a (mere) aggregate of state affect, it may seem unnecessary to introduce affective well-being as an additional construct. A complete understanding of the determinants of momentary affective experiences would provide researchers with a complete theory of affective well-being. However, momentary affective experiences are the result of complex interactions between situational and personality factors. For example, Kahneman and colleagues (2004) found that participants tended to experience high levels of positive affect when they had intimate relations; they also reported higher positive affect when they were with friends than when they were with their spouses. Based on a simple additive situationist model, these findings would suggest that participants could increase well-being by spending more time having intimate relations with friends. More likely, however, a simple additive model of situational factors fails to take the complexity of situational influences and interactions between situational factors and personality dispositions into account.

Faced with the complexity of determinants of state affect, it can be beneficial to examine the determinants of affective experiences over an extended period of time. The

benefit of aggregation is that it reveals causal factors that make a strong contribution to affective well-being. For example, the first warm day in spring is likely to produce an increase in positive affect for most people, but it can only make a relatively minor contribution to affective well-being. In contrast, recurrent events like socializing with friends or commuting could make a substantial contribution to affective well-being. Similarly, affective dispositions can have a strong influence on affective well-being because they can influence individuals' momentary affective experiences in many situations.

It is well-known from the person-situation debate that aggregation reduces the influence of situational factors (Epstein 1979; Mischel and Peake 1983). However, aggregation does not remove the influence of all situational factors; it only removes the influence of unique situational factors like the first warm day of spring or one's own birthday party. In contrast, recurrent events such as commuting or (hopefully) intimate relationships can still contribute to aggregates of state affect. Thus, Epstein (1979) may have exaggerated the importance of personality dispositions by equating aggregates of momentary affect with personality. At the same time, Mischel and Peake (1983) falsely assumed that aggregation removes all situation factors and treats "the contexts of life as 'error'" (p. 395). It is an empirical question to which extent global affective dispositions versus recurrent or persistent situational factors contribute to affective well-being. In our study, we used a multi-method approach to provide a first estimate of the contribution of personality dispositions to affective well-being.

Although our study is the first study to use a multi-method approach, we were able to make some predictions based on previous mono-method studies. The existing evidence points to strong influences of personality dispositions on affective well-being (Diener and Lucas 1999). A seminal study by Diener and Larsen (1984) demonstrated high levels of cross-situational consistency for positive affect and negative affect. Other studies have replicated this finding (Oishi et al. 2004). In addition, Epstein (1979) found that affective experiences are more stable than situations. This finding suggests that stability in situational factors is insufficient to explain the stability in affective experiences. Personality dispositions provide a plausible explanation for this finding. However, the existing evidence has some limitations. First, the reviewed studies relied on self-ratings to measure affective experiences (Oishi et al. 2004). It is possible that shared method variance produced inflated estimates of cross-situational consistency. The reason is that response styles have a relatively weak effect on single measures of affect, but aggregation increases the effect of systematic response styles on aggregated measures of affect (Anusic et al. 2009; Schimmack et al. 2002). If affect ratings are more susceptible to rating biases than ratings of situations, shared method variance could also explain Epstein's (1979) finding of higher stability in affect than in situations. In order to estimate cross-situational consistency without the influence of response styles, it is necessary to obtain informant reports of affect. However, no prior studies exist that have examined cross-situational consistency using both self and informant reports.

The second problem is that previous studies of cross-situational consistency did not include measures of affective dispositions as predictors of affective well-being. As a result, it is possible that stable situational factors (e.g., unemployment, disability) produce cross-situational consistency in people's affective experiences (Lucas et al. 2004). Thus, it is necessary to include measures of both affective dispositions and affective experiences to estimate the contribution of dispositions and stable situational factors on affective well-being.

A third limitation is that estimates of cross-situational consistency depend on the type of situations that were examined. Cross-situational consistency could be high for one set of

situations (e.g., alone vs. with friends) and low for another set of situations (e.g., alone at home vs. alone in a bar). For this reason, it is important to examine situations that have the potential to produce unique variance in affective well-being.

Finally, prior studies have been limited to college students as participants. College students have unusual freedom in selecting situations. As a result, happy students may always be happier no matter what situations they choose to be in. In contrast, working adults do not have a choice about commuting or working. Thus, it is possible that one would find less cross-situational consistency in these populations.

To address these limitations, we conducted a study of affective well-being with married couples. Specifically, we examined the influence of being with one's spouse on affective well-being. We chose married couples because (a) spouses spend considerable time with each other (Kahneman et al. 2004), (b) the well-being of one spouse is related to the well-being of the other spouse (Bookwala and Schulz 1996; Schimmack and Lucas 2010), and (c) spouses' well-being increases when they are spending time together while pursuing a shared goal (Gere et al. 2010). Based on this evidence, we predicted that spouses make a unique contribution to affective well-being. At the same time, research has shown that affective dispositions contribute to relationship satisfaction (Robins et al. 2000). For this reason, we also expected effects of affective dispositions on affective experiences when spouses are together. Rather than choosing an arbitrary comparison category, we used the situations in which participants were not with their spouse as the contrasting condition. Moreover, we were interested in the effects of both situations on affective well-being. Thus, we measured total affective well-being, which is by definition a weighted sum of the amount of well-being with a spouse and without a spouse.

A final contribution of our study was to contribute to the extensive literature on the relation between positive affect (PA) and negative affect (NA). A main problem in this research area has been the strong influence of methodological factors on empirical findings with correlations between measures of PA and NA ranging from $r = +.6$ to $r = -.9$ (see Schimmack 2007 for a review). A major problem of these studies is that most studies used mono-method data which confound substantive relations with method artifacts. So far, the only multi-method study on this issue produced a moderate negative correlation between dispositional positive affect and dispositional negative affect (Diener et al. 1995). However, the study also revealed some systematic measurement error (Schimmack et al. 2002). Daily diary data underestimate the negative relation between PA and NA, presumably because aggregation of daily ratings accentuates the influence of response styles. At the same time, informant ratings introduce a negative bias, presumably because informant ratings are more prone to halo biases (Anusic et al. 2009). Our study builds on these findings by examining whether the correlation between positive affect and negative affect is different for affective dispositions and for affective well-being. We also examined whether the correlation would be stronger for PA and NA within the same situation (with partner) than in an aggregate across different situations (total affective well-being).

In our study, we used the following indicators to measure the constructs of interest. Affective dispositions were assessed with self-ratings and informant ratings of general affective dispositions by both spouses at the beginning of the study. Affective experiences with the spouse were assessed with experience sampling over a two-week period as well as retrospective self-ratings and informant ratings by the spouse. Affective well-being was assessed with retrospective self-ratings and informant ratings during the 2-week experience sampling period. Our study did not include an independent measure of affective experiences without a partner. The reason was that it seems a difficult cognitive task to make

valid estimates of affect in a situation that is specified by the absence of a partner because memory-based judgments of affective well-being are based on episodic memory traces that match the retrieval cue (Schimmack 2002). Fortunately, we did not require an independent assessment of affect without a partner because affect without a partner is defined as the variance in total affective well-being that is not explained by affective experiences with a partner. In our study we measured both affective well-being with the partner and total affective well-being. Thus, it is possible to estimate the contribution of situational factors when respondents are not with their partner based on the residual variance in total affective well-being. Readers who are skeptical about our approach should note that this approach is mathematically identical to a simple regression model in which affective well-being is regressed on affective dispositions and affective experiences with partner. Residual variance in this regression model reflects variance that is not explained by dispositions and the influence of a spouse, which reflects the influence of other situational factors.

Figure 1 shows how we used the data to test our main predictions. The same model was specified separately for positive affect and negative affect. First, we expected to find strong ($r > .5$) positive effects of affective dispositions on affective experiences with partner (paths a & a', for PA and NA, respectively) and without partner (paths b & b'). Affective well-being is by definition a weighted average of affect with partner (paths c & c') and affect without partner (paths d & d'). As a result, there is no residual variance in affective well-being. We also expected that situation specific factors contribute to variance in affect with partner (paths e & e') and affect without partner (paths f & f'). We also expected moderate to strong negative correlations between affective dispositions (path g, $r \sim -.4$) based on Diener et al.'s (1995) study. In addition, we allowed for additional correlations among situation specific factors under the assumption that situations can have opposing effects on negative affect and positive affect (paths h and i; Headey and Wearing 1989).

2 Method

2.1 Participants

Married couples ($N = 97$) from the Greater Toronto area participated in this study. The sample is the same sample that has been used for other papers using different measures (Anusic et al. 2009; Gere et al. 2010; Pinkus et al. 2008). Only one related paper used the experience sampling data to examine within-subject variation in well-being, but it did not examine between-subject variation in affective well-being. This is the first paper that uses self and informant ratings of affective dispositions and affective well-being. On average, wives were 37.42 years old ($SD = 11.30$, range = 21–69) and husbands were 40.26 years old ($SD = 12.31$, range = 23–74). The spouses were married for 9.89 years on average ($SD = 10.01$, range = 0.22–42 years). The sample came from a variety of ethnic backgrounds: 26.8% were Western European, 21.1% were South Asian, 11.9% were Eastern European, 9.8% were East Asian, and the remaining 30.5% were of other backgrounds. In terms of education, most completed college/university (65.0% of wives, 60.9% of husbands) or had post-graduate or professional degrees (16.5% of wives, 21.7% of husbands). The remainder of the sample had some college education (6.2% of wives, 7.2% of husbands), completed high school (11.3% of wives, 9.3% of husbands), or had some high school education (0% of wives, 1.0% of husbands).

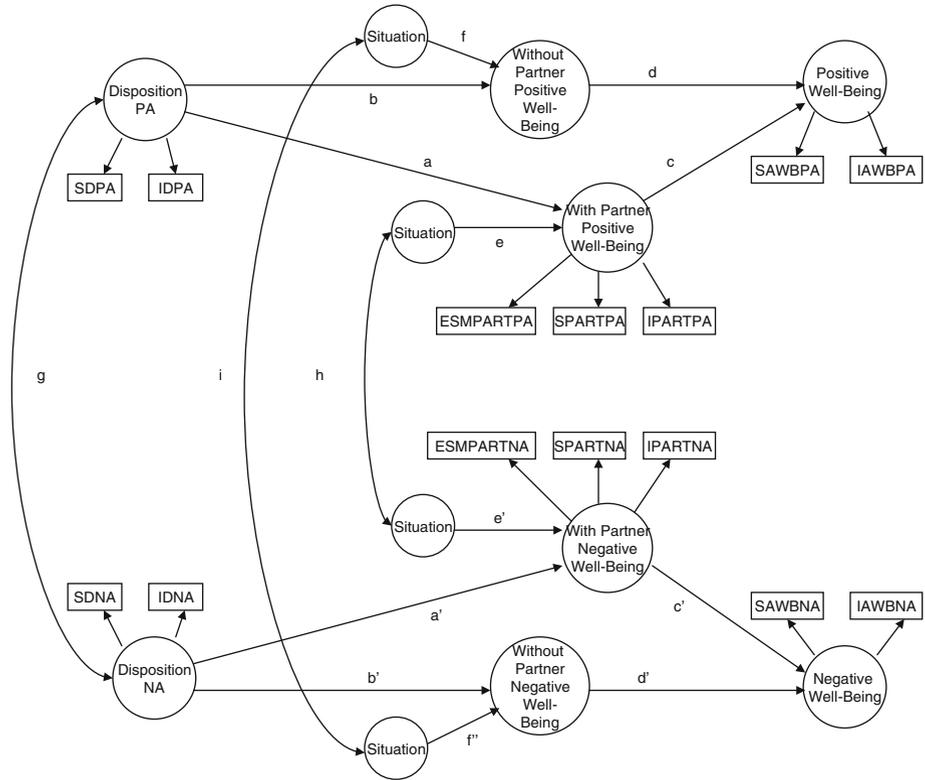


Fig. 1 Theoretical model of the relations between affective dispositions and affective well-being. *SDPA* self-report of dispositional positive affect; *IDPA* informant report of dispositional positive affect; *SAWBPA* self-report of affective-well-being, positive affect; *IAWBPA* informant report of affective well-being, positive affect; *ESMPARTPA* experience sampling, with partner positive affect; *SPARTPA* self-report of with partner positive affect; *IPARTPA* informant report of with partner positive affect; *SDNA* self-report of dispositional negative affect; *IDNA* informant report of dispositional negative affect; *SAWBNA* self-report of affective-well-being, negative affect; *IAWBNA* informant report of affective well-being, negative affect; *ESMPARTNA* experience sampling, with partner negative affect; *SPARTNA* self-report of with partner negative affect; *IPARTNA* informant report of with partner negative affect

2.2 Procedures

Couples came into the lab together and filled out a series of intake questionnaires. We only describe the questionnaires that were used for this study. After filling out the intake questionnaires, each member of the couple was given a personal digital assistant (PDA) that they took home for a period of 2 weeks. The PDAs were programmed to signal six times each day at approximately 2–3 h intervals, with the first and last signal adjusted for each participant based on their reports of their waking hours. Furthermore, the PDAs were also programmed to signal approximately half of the time during a time period when the participants indicated that they were likely to be together with their spouse, and half of the time during a time period when participants indicated that they were not likely to be together with their spouse. Each time the PDA signaled, participants were asked to respond to a series of questions (described below). The use of the PDAs and the questions that had

to be answered when they were signaled were explained to participants before the couples took the PDAs home for the 2-week period. After the 2 weeks ended, couples came into the lab again to return the PDAs and also to fill out a series of exit questionnaires that asked them a variety of questions about the 2-week experience-sampling period.

2.3 Intake and Exit Questionnaires

The intake questionnaire asked participants to indicate how often they experience a number of emotions in general, on a typical day. There were eight items representing negative emotions (bad, angry, sad, negative, unpleasant, afraid, guilty, and jealous; $\alpha = .87$), and five items representing positive emotions (positive, pleasant, love, good, and happy; $\alpha = .88$). Each participant also provided informant reports on their spouse, indicating how often their spouse felt each of the emotions, with the exception of the item jealous, in general (negative emotions: $\alpha = .85$; positive emotions: $\alpha = .91$). For each item, participants responded on an 8-point scale ranging from 0 (*never, 0% of waking time*) to 7 (*always, 100% of waking time*). The disposition measures neglect the intensity of affective experiences because it is more difficult to measure dispositional affect intensity (Schimmack and Diener 1997) and affect intensity makes a negligible contribution to affective well-being (Diener et al. 1991; Schimmack 2003).

On the exit questionnaire, participants once again reported on their emotions, using the same 13 items as in the intake questionnaire. However, this time they reported on how they felt over the past 2 weeks, both total and with the spouse (negative emotions: $\alpha = .89$; positive emotions: $\alpha = .92$). Each participant also reported on their partner's emotions (total and with spouse), indicating how their partner felt over the past 2 weeks (negative emotions: $\alpha = .88$; positive emotions: $\alpha = .92$). For each item, participants again responded on an 8-point scale ranging from 0 (*never, 0% of waking time*) to 7 (*always, 100% of waking time*).

2.4 Experience Sampling Questionnaire

Each time participants received a signal, they had to respond to a number of questions about their ongoing states. First, they reported how they felt at the moment, using one positive emotion item (happy/cheerful) and three negative emotion items (angry/irritated, worried/anxious, sad/blue). They rated how they felt on a 7-point scale ranging from 0 (*no*) to 6 (*yes, maximum*). Then the participants indicated whether they were together with their partner or not. In the experience sampling component of the study, participants completed 82 reports on average ($SD = 8.41$, range = 58–147). They were together with their spouse on average on 45 signals ($SD = 13.19$, range = 11–83), and apart from their spouse on 37 signals on average ($SD = 12.78$, range = 3–85).

2.5 Data Analysis

Data analysis was conducted using the software MPlus 5 (Muthén and Muthén 1998–2007). Using the positive affect items from the intake questionnaire, two aggregate scores were created for each person by averaging across the items: self-report of positive affective disposition (S-D-PA), and informant report of partner's positive affective disposition (I-D-PA). The same was also done for the negative affect items to create two indicators of dispositional negative affect (S-D-NA, I-D-NA). The same procedure was used to create indicators of total affective well-being based on retrospective ratings of overall affect in the

past 2 weeks (S-AWB-PA, I-AWB-PA, S-AWB-NA, I-AWB-NA). The same approach was used for the context specific ratings of affective experiences with a partner in the past 2 weeks (S-PART-PA, I-PART-PA, S-PART-NA, I-PART-NA). Finally, we created indicators for affective experiences with partner based on the experience sampling data (ESM-PART-PA, ESM-PART-NA).

3 Results

Table 1 shows the zero-order correlations between all of the variables used in the study, as well as their means and standard deviations. These correlations allow readers to test alternative models of our data, and they provide direct evidence regarding our hypothesis without potentially biasing estimates due to model misspecification.

The first important finding was that all correlations among positive affect measures were positive. More important, the cross-rater correlations were, with one exception, in the range from .3 to .5. This finding is consistent with meta-analytic findings of rater agreement (Schneider and Schimmack 2009). In contrast, same-rater correlations are much higher, indicating considerable rater-specific variance. This finding is common in multi-method studies (Campbell and Fiske 1959), and could indicate method variance that inflates estimates of cross-situational consistency in mono-method studies. The experience sampling data, however, show less shared method variance in that correlations with self-ratings are only slightly stronger than those with informant ratings. The differences are

Table 1 Zero-order correlations between study variables, their means and standard deviations

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. SDPA	1.00													
2. IDPA	.36	1.00												
3. SAWBPA	.66	.33	1.00											
4. IAWBPA	.38	.62	.42	1.00										
5. SPARTPA	.65	.34	.79	.32	1.00									
6. IPARTPA	.31	.60	.36	.85	.34	1.00								
7. ESMPARTPA	.38	.25	.52	.35	.46	.36	1.00							
8. SDNA	-.51	-.25	-.41	-.17	-.36	-.17	-.19	1.00						
9. IDNA	-.35	-.51	-.26	-.33	-.19	-.30	-.16	.42	1.00					
10. SAWBNA	-.36	-.24	-.55	-.29	-.36	-.28	-.30	.61	.31	1.00				
11. IAWBNA	-.33	-.34	-.40	-.52	-.28	-.41	-.22	.27	.58	.46	1.00			
12. SPARTNA	-.35	-.27	-.40	-.22	-.43	-.30	-.26	.57	.29	.81	.39	1.00		
13. IPARTNA	-.32	-.31	-.36	-.51	-.27	-.48	-.25	.29	.54	.47	.89	.43	1.00	
14. ESMPARTNA	-.19	-.06	-.32	-.09	-.25	-.09	-.17	.50	.21	.67	.37	.60	.32	1.00
<i>M</i>	4.92	4.98	4.93	5.05	5.23	5.17	4.32	1.15	1.31	1.01	1.01	0.76	0.84	1.44
<i>SD</i>	1.25	1.36	1.30	1.30	1.26	1.33	1.13	0.87	1.06	0.93	0.88	0.86	0.83	0.49

SDPA Self, dispositional positive affect; *IDPA* informant, dispositional positive affect; *SAWBPA* self, affective well-being, positive affect; *IAWBPA* informant, affective well-being, positive affect; *SPARTPA* self, with partner positive affect; *IPARTPA* informant, with partner positive affect; *ESMPARTPA* experience sampling method, with partner positive affect; *SDNA* self, dispositional negative affect; *IDNA* informant, dispositional negative affect; *SAWBNA* self, affective well-being, negative affect, *IAWBNA* informant, affective well-being, negative affect; *SPARTNA* self, with partner negative affect; *IPARTNA* informant, with partner negative affect; *ESMPARTNA* experience sampling method, with partner negative affect

small based on Cohen's effect size measure of differences between correlations (.38 vs. .25, $q = .14$; .52 vs. .35, $q = .21$; .46 vs. .36, $q = .12$).

The evidence regarding discriminant validity was disappointing. Retrospective ratings by self and informant do not clearly distinguish between affective experiences with partner and overall affective well-being as indicated by similar correlations with the experience sampling measure of affect with partner (self .52 vs. .46, informant .35 vs. .36). However, the disposition measure shows more evidence of discriminant validity in the correlations with the ESM measure (self: .38 vs. .52 & .46, informant .25 vs. .35 & .36). In short, the results show cross-method evidence for a relation between general dispositions and affective experiences with partner and without partner.

It is important to note that weak observed correlations of disposition measures with experience sampling data of affective experiences have to be interpreted in the context of the common moderate level of convergent validity of these measures (Schimmack 2010). A simple way to correct for this attenuation is to divide observed cross-method correlations by the convergent validity (e.g., $.25/ (.36 * .35)^{1/2} = .69$). This would suggest that dispositions account for 48% of the variance in the affective experiences with partner ($.69^2 = .48$). A more accurate estimate will be provided by the causal model of these correlations.

Inspection of the pattern of correlations for negative affect provides a fairly similar picture: (a) positive cross-rater correlations show evidence for convergent validity, (b) memory based measures show no discriminant validity for affect with partner and total affective well-being, and (c) correlations with ESM data show discriminant validity for disposition measures compared to AWB measures.

Inspection of the correlations of PA measures and NA measures shows consistent negative correlations. However, the magnitude of these correlations ranges from $r = -.06$ to $r = -.51$. The strongest negative correlations were obtained for memory-based judgments by the same rater on the same occasion. This finding suggests that method variance that inflates positive correlations among measures of the same valence also inflates negative correlations among measures of the opposite valence. However, weaker cross-method correlations have to be interpreted in the context of moderate convergent validity of these measures. We used structural equation modeling to estimate the relation between positive and negative affect more accurately.

To account for the interdependence of spouses, we used the cluster command in MPLUS, which adjusts standard errors and fit indices according to the estimated intra-class correlations in the data.

We first fitted our theoretical model in Fig. 1 to the data. The model encountered some problems because our theoretical model assumed that affect with partner is distinct from overall affect, whereas our measures failed to provide evidence for discriminant validity. Thus it was not possible to model affect with partner as a separate construct from total affective well-being. For this reason, we fitted a simpler model with a single total affective well-being factor (Fig. 2), which was specified using both with partner and overall affect indicators from both the self and informant.

Based on standard criteria for model fit, our model had acceptable fit (Kline 2005): $\chi^2(67) = 104.20$, $p = .002$, CFI = .972, RMSEA = .053, SRMR = .083. In the measurement model of the latent factors, all of the measures loaded on their factors with loadings ranging from .56 to .79 (Table 2). This finding is consistent with previous estimates of 30–70% valid variance in self and informant reports of personality characteristics (Schimmack 2010).

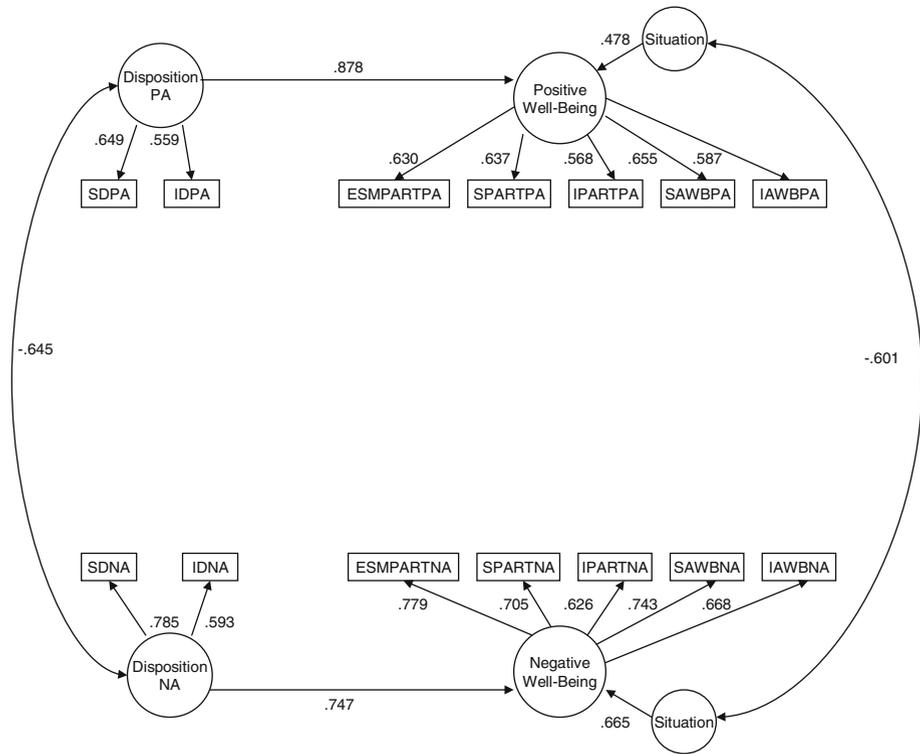


Fig. 2 The final model, showing the structural relations between positive and negative affective dispositions and positive and negative affective well-being, with fully standardized estimates. *SDPA* self-report of dispositional positive affect; *IDPA* informant report of dispositional positive affect; *SAWBPA* self-report of affective-well-being, positive affect; *IAWBPA* informant report of affective well-being, positive affect; *ESMPARTPA* experience sampling, with partner positive affect; *SPARTPA* self-report of with partner positive affect; *IPARTPA* informant report of with partner positive affect; *SDNA* self-report of dispositional negative affect; *IDNA* informant report of dispositional negative affect; *SAWBNA* self-report of affective-well-being, negative affect; *IAWBNA* informant report of affective well-being, negative affect; *ESMPARTNA* experience sampling, with partner negative affect; *SPARTNA* self-report of with partner negative affect; *IPARTNA* informant report of with partner negative affect

The model in Fig. 2 shows that affective dispositions have a strong influence on affective well-being for both positive affective well-being (.878, SE = .071, CI = .740 | 1.000) and negative affective well-being (.747, SE = .100, CI = .551 | .942). The complementary effect sizes for the effects of situational factors were smaller (PA: .478, SE = .130, CI = .224 | .732; NA: .665, SE = .112, CI = .446 | .885). However, the wide and overlapping confidence intervals make it difficult to make inferences about the relative contribution of dispositions and situational factors. In sum, the results show evidence for effects of dispositions and situational factors.

Our results also confirm previous findings that, after controlling for measurement error, positive affect and negative affect are neither independent, nor bipolar opposites. Rather, they are separable characteristics that are negatively correlated. Our analysis shows that this is the case for measures of dispositions (-.645, SE = .115, CI = -.871 | -.420) and the situational factors that contribute to affective well-being (-.601, SE = .176, CI = -.946 | -.256). The point estimate of the negative relationship is stronger than in Diener et al.'s

Table 2 Fully standardized estimates for the measurement models and their 95% confidence intervals

	<i>B</i>	95% CI
Trait positive affect		
Self	.649	.516 .782
Informant	.559	.438 .681
Trait negative affect		
Self	.785	.605 .964
Informant	.593	.480 .706
Positive well-being		
Self	.655	.547 .764
Informant	.587	.491 .683
With-partner self	.637	.513 .762
With-partner informant	.568	.454 .682
Experience sampling	.630	.478 .782
Negative well-being		
Self	.743	.640 .846
Informant	.668	.544 .792
With-partner self	.705	.554 .855
With-partner informant	.626	.447 .805
Experience sampling	.779	.660 .897

(1995) study, but the wide confidence intervals imply that our results are consistent with Diener et al.'s (1995) findings. Moreover, dispositional factors and situational factors show the same negative relationship. As a result, total affective well-being also has a similar negative relationship ($-.614$).

The model also provided evidence for method-specific variance in self-ratings and informant ratings of positive affect and negative affect (see Table 3). Furthermore, residual variances of positive affect and negative affect were negatively correlated (see Table 4). This finding shows that observed correlations in mono-method studies are influenced by evaluative biases (Anusic et al. 2009). Due to the opposing effects of attenuation due to random and systematic measurement error and the inflated effect of shared evaluative biases, observed PA and NA correlations approach the true correlations that control for measurement error. This finding is consistent with a meta-analysis of the effect of measurement error on observed correlations in multi-trait multi-method studies (Lance et al. 2010).

4 Discussion

In sum, our multi-trait multi-method examination of both dispositional positive and negative affect and positive and negative affective well-being showed evidence of convergent validity across all affect ratings, a lack of discriminant validity between overall and situation-specific affective well-being, a strong influence of dispositions on affective well-being, systematic rating biases, evaluative biases, and a strong negative relationship between both positive and negative dispositions and positive and negative affective well-being. Next, we will discuss the significance and implications of each of these findings.

Table 3 Fully standardized factor loadings of the method factors

	Self		Informant	
	<i>B</i>	95% CI	<i>B</i>	95% CI
PA method				
Dispositional	.402	.189 .615	.468	.332 .604
Affective Well-Being	.597	.465 .728	.721	.643 .799
With-Partner Affect	.609	.478 .740	.733	.650 .816
NA method				
Dispositional	.242	.047 .436	.488	.349 .627
Affective well-being	.509	.378 .640	.681	.554 .809
With-partner affect	.540	.391 .689	.714	.558 .870

Table 4 Fully standardized residual correlations of positive affect and negative affect ratings within questionnaires

	<i>B</i>	95% CI
Self		
Disposition	-.262	-.548 .024
Affective well-being	-.765	-1.068 -.463
With partner	-.361	-.563 -.159
Informant		
Disposition	-.440	-.628 -.252
Affective well-being	-.419	-.784 -.054
With partner	-.256	-.616 .104

The finding of convergent validity between the different types of affect measures is in line with the findings of Diener et al. (1995), who found convergent validity for self- and informant ratings of dispositional affect and aggregated daily diary data. We extend this finding to experience sampling data. At the same time, our results also confirm previous findings that each method has a moderate amount of valid variance in the typical range of 30 to 70% valid variance (Schimmack 2010). As a result, we recommend a multi-method assessment for more precise estimates of the effect of affective dispositions on well-being (Schimmack 2010). Mono-method studies are likely to underestimate the actual effect of personality disposition on well-being.

We also replicated Diener et al.'s (1995) finding of a negative correlation between dispositions for positive affect and dispositions for negative affect. Although our estimate is somewhat stronger than their estimate, the difference is not statistically reliable. Combining these two studies suggests an approximate correlation of $r = -.5$ between PA and NA. Our study extends Diener et al.'s (1995) study by demonstrating a negative correlation for dispositions and for situational factors. We find no evidence for the hypothesis that situational factors have a stronger inverse effect on PA and NA (Eid 1995). The reason could be that we examined situational factors that influence aggregated momentary experiences over a 2-week interval. It is possible that situational factors have a stronger inverse effect on momentary experiences of affect (Diener and Emmons 1984).

A novel contribution of our study was the examination of cross-situational consistency in affective experiences by means of multiple methods, as this has never been done in prior studies. Our study provided evidence for cross-situational consistency in that general affective dispositions predicted a large portion of the variance in affective experiences with

a partner and overall affective well-being. For example, participants' own ratings of their general disposition were positively related to their own experience sampling data of affective experiences with their partner and informant ratings by their partners. Although observed correlations were in the typical range of $r = .3$ that have been interpreted as evidence for weak effects of general dispositions, these observed correlations are in part due to the moderate validity of self-report measures. After taking measurement error into account, general dispositions could explain half of the between-subject variation in our study. This estimate is similar to the estimate of affect stability across a three-week period in Diener and Larsen's (1984) mono-method study. This suggests that the stability of affective experiences could be largely due to the influence of affective dispositions.

4.1 Limitations

Although our study made some methodological advances over previous studies, our study also has several limitations that need to be addressed in future research. First, our sample size was relatively small. As a result, confidence intervals of our parameter estimates are wide and it is difficult to say whether personality factors or situational factors make a stronger contribution to affective well-being. Another limitation was the focus on a two-week interval. It is possible that the relative influence of dispositions and situations changes as a function of the time interval. Thus, future studies should attempt to use larger samples and include longer time interval to measure affective well-being.

Another limitation is the reliance on only two raters for our multi-method assessment. Although few studies use informants, studies with three or more raters would make it easier to separate dispositional factors from measures of affective well-being. It would also be ideal to use raters who see individuals in different situations because agreement across raters who see participants in different situations could only be due to cross-situational consistency of the participants' affect. In our study, it is possible that spouses' informant ratings of affective dispositions reflect specific situational factors of the relationship.

Finally, although our study is the first to use multiple measures of cross-situational consistency in affective experiences, we failed to demonstrate discriminant validity of our measures of affective experiences with partner and overall affective well-being. The lack of discriminant validity was present for both self-ratings and informant ratings of with partner and overall affective well-being. In order to examine cross-situational consistency in affective experiences in the future, it will be crucial to develop and validate multiple measures that are sensitive to situational factors. This is a major challenge because most studies of affective experiences and well-being rely exclusively on self-report measures of momentary affective experiences. This is true for studies that use experience sampling and studies that use the more recent day-reconstruction method. Given the difficulty of developing alternative measures, it is important to develop measures that can be used to detect and remove response artifacts from these ratings. Despite all of these limitations, our study makes a valuable contribution to the study of affective well-being by demonstrating, for the first time, cross-situational consistency in affective experiences with multi-method data. Thus, it is no longer possible to attribute high levels of cross-situational consistency to response styles.

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References

- Anusic, I., Schimmack, U., Pinkus, R. T., & Lockwood, P. (2009). The nature and structure of correlations among Big Five ratings: The halo-alpha-beta model. *Journal of Personality and Social Psychology, 97*, 1142–1156.
- Bookwala, J., & Schulz, R. (1996). Spousal similarity in subjective well-being: The cardiovascular health study. *Psychology and Aging, 11*, 582–590.
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*, 81–105.
- Costa, P. T., & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being: Happy and unhappy people. *Journal of Personality and Social Psychology, 38*, 668–678.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542–575.
- Diener, E. (1999). Introduction to the special section on the structure of emotion. *Journal of Personality and Social Psychology, 76*, 803–804.
- Diener, E., & Emmons, R. A. (1984). The independence of positive and negative affect. *Journal of Personality and Social Psychology, 47*(5), 1105–1117.
- Diener, E., & Larsen, R. J. (1984). Temporal stability and cross-situational consistency of affective, behavioral, and cognitive responses. *Journal of Personality and Social Psychology, 47*, 871–883.
- Diener, E., & Lucas, R. E. (1999). Personality and subjective well-being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 213–229). New York: Russell Sage Foundation.
- Diener, E., Sandvik, E., & Pavot, W. (1991). Happiness is the frequency, not the intensity, of positive versus negative affect. In F. Strack, M. Argyle, & N. Schwarz (Eds.), *Subjective well-being: An interdisciplinary perspective. International series in experimental social psychology* (Vol. 21, pp. 119–139). Elmsford, NY: Pergamon Press.
- Diener, E., Smith, H., & Fujita, F. (1995). The personality structure of affect. *Journal of Personality and Social Psychology, 69*, 130–141.
- Eid, M. (1995). *Modelle der Messung von Personen in Situationen*. [Models of measuring individuals in situations]. Weinheim, Germany: Beltz-PVU.
- Epstein, S. (1979). The stability of behavior: I. On predicting most of the people much of the time. *Journal of Personality and Social Psychology, 37*, 1097–1126.
- Flügel, J. C. (1925). A quantitative study of feeling and emotion in everyday life. *British Journal of Psychology, 15*, 318–355.
- Funder, D. C. (1991). Judgments of personality: A new approach to the accuracy issue. In D. J. Ozer, J. M. Healy Jr, & A. J. Stewart (Eds.), *Perspectives in personality* (Vol. 3, pp. 107–132). London, England: Jessica Kingsley Publishers.
- Gere, J., Schimmack, U., Pinkus, R. T., & Lockwood, P. (2010). *The effects of romantic partners' goal congruence on affective well-being*. Manuscript submitted for publication.
- Headey, B., & Wearing, A. (1989). Personality, life events, and subjective well-being: Toward a dynamic equilibrium model. *Journal of Personality and Social Psychology, 57*, 731–739.
- Kahneman, D. (1999). Objective happiness. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 3–25). New York: Russell Sage Foundation.
- Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. *Science, 306*, 1776–1780.
- Lance, C. E., Dawson, B., Birkelbach, D., & Hoffman, B. J. (2010). Method effects, measurement error, and substantive conclusions. *Organizational Research Methods, 13*, 435–455.
- Lucas, R. E., Clark, A. E., Georgellis, Y., & Diener, E. (2004). Unemployment alters the set point for life satisfaction. *Psychological Science, 15*, 8–13.
- Lykken, D., & Tellegen, A. (1996). Happiness is a stochastic phenomenon. *Psychological Science, 7*, 186–189.
- Mischel, W., & Peake, P. K. (1983). Some facets of consistency: Replies to Epstein, Funder, and Bem. *Psychological Review, 90*, 394–402.
- Muthén, L., & Muthén, B. (1998–2007). MPlus (Version 5) [Computer software]. Los Angeles: Muthén & Muthén.
- Oishi, S., Diener, E., Scollon, C. N., & Biswas-Diener, R. (2004). Cross-situational consistency of affective experiences across cultures. *Journal of Personality and Social Psychology, 86*, 460–472.
- Pinkus, R. T., Lockwood, P., Schimmack, U., & Fournier, M. A. (2008). For better and for worse: Everyday social comparisons between romantic partners. *Journal of Personality and Social Psychology, 95*, 1180–1201.

- Robins, R. W., Caspi, A., & Moffitt, T. E. (2000). Two personalities, one relationship: Both partners' personality traits shape the quality of their relationship. *Journal of Personality and Social Psychology*, *79*, 251–259.
- Schimmack, U. (2002). Frequency judgements of emotions: The cognitive basis of personality assessment. In P. Sedlmeier & T. Betsch (Eds.), *ETC. Frequency processing and cognition* (pp. 189–204). New York: Oxford University Press.
- Schimmack, U. (2003). Affect measurement in experience sampling research. *Journal of Happiness Studies*, *4*, 79–106.
- Schimmack, U. (2007). Methodological issues in the assessment of the affective component of subjective well being. In A. Ohn & M. van Dulmen (Eds.), *Handbook of methods in positive psychology* (pp. 96–110). Oxford: Oxford University Press.
- Schimmack, U. (2010). What multi-method data tell us about construct validity. *European Journal of Personality*, *24*, 241–257.
- Schimmack, U., Bockenholt, U., & Reisenzein, R. (2002a). Response styles in affect ratings: Making a mountain out of a molehill. *Journal of Personality Assessment*, *78*, 461–483.
- Schimmack, U., Diener, E., & Oishi, S. (2002b). Life satisfaction is a momentary judgment and a stable personality characteristic: The use of chronically accessible and stable sources. *Journal of Personality*, *70*, 345–384.
- Schimmack, U., Radhakrishnan, P., Oishi, S., Dzokoto, V., & Ahadi, S. (2002c). Culture, personality, and subjective well-being: Integrating process models of life satisfaction. *Journal of Personality and Social Psychology*, *82*, 582–593.
- Schimmack, U., & Diener, E. (1997). Affect intensity: Separating intensity and frequency in repeatedly measured affect. *Journal of Personality and Social Psychology*, *73*, 1313–1329.
- Schimmack, U., & Lucas, R. E. (2010). Environmental influences on well-being: A dyadic latent panel analysis of spousal similarity. *Social Indicators Research*, *98*, 1–21.
- Schneider, L., & Schimmack, U. (2009). Self-informant agreement in well-being ratings: A meta-analysis. *Social Indicators Research*, *94*, 363–376.
- Steyer, R., Schmitt, M., & Eid, M. (1999). Latent state-trait theory and research in personality and individual differences. *European Journal of Personality*, *13*, 389–408.