Daily Experiences and Well-Being: Do Memories of Events Matter?

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Abstract

Retrospective subjective well-being (SWB) refers to self-reported satisfaction and emotional experience over the past few weeks or months. Two studies investigated the mechanisms linking daily experiences to retrospective SWB. Participants reported events each day for 21 days (Study 1) or twice a week for two months (Study 2). The emotional intensity of each event was rated (i) when it had recently occurred (proximal intensity); and (ii) at the end of the event-reporting period (distal intensity). Both sets of ratings were then aggregated across events and used to predict retrospective SWB at the end of the study. Path analyses showed that proximal intensity predicted retrospective SWB whereas distal intensity did not. The effect remained even after controlling for trait happiness and neuroticism. These results suggest that daily experiences influence retrospective SWB primarily through abstract representations of the past few weeks or months (as measured by aggregated proximal intensity ratings) rather than the explicit recollection of individual events during the same period (as measured by aggregated distal intensity ratings). Retrospective SWB, in turn, mediated the effect of daily experiences on global SWB (i.e., self-reported satisfaction and emotional experiences *in general*).

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Daily life is filled with ups and downs. A fun-filled dinner with close friends might be followed hours later by an upset stomach after eating something that did not agree with us. As positive and negative experiences accumulate over time, how do they contribute to our sense of well-being? Presumably, positive events make us happy and negative events make us unhappy. However, the relation between everyday experience and well-being is not always as clear-cut. As Schwarz and Strack (1991) proposed, events may not influence well-being judgments unless they are cognitively accessible at the time of reporting. For example, when students first reported how often they went on dates and then rated their life satisfaction, the correlation between the two items was .66 (Strack, Martin, & Schwarz, 1988). However, when the order was reversed, the correlation was not significant. Dating frequency was only related to well-being when it was made cognitively accessible *prior to* evaluating life satisfaction.

One interpretation of the order effects identified by Strack et al. (1988) is that the experience of an event is not as important as whether we remember it when reporting our well-being. Though intriguing, this hypothesis also challenges the validity of well-being measures. As Schwarz and Strack (1991, 1999) concluded, well-being reports may not reflect stable internal states, but are judgments constructed at the time of query from whatever information is accessible and deemed relevant. Thus self-reported well-being can be misleading because it only reflects a subset of experiences that may not have been meaningfully accessible.

The present research sought to clarify this issue, focusing specifically on the relation between everyday experience and subjective well-being (SWB). The latter consists of cognitive, satisfaction judgments as well as affective experiences (Diener, Suh, Lucas, & Smith, 1999). Drawing on the distinction between episodic and semantic memory (Robinson & Clore, 2002a; Tulving, 1993), I propose three potential mechanisms linking everyday experiences to SWB:

episodic memory, recent-past representations, and dispositional causation. Table 1 presents a summary of the key constructs and how they are operationalized in the present research.

Episodic and Semantic Memory in Self-Reported Emotion

Similar to Schwarz and Strack (1991, 1999), Robinson and Clore (2002a) proposed that people evaluate their emotional experiences using the most accessible information that is relevant to the judgment at hand. More specifically, when people are asked to make *short-term* evaluations of their emotional experiences (e.g., how happy they felt during the past day), they rely primarily on episodic memory—their conscious recollection of the specific events they experienced during the referenced period. However, when people are asked to make *global* evaluations of their emotional experiences (e.g., how happy they feel in general), there are too many past events to recall and many remain inaccessible. In that case, people rely more on semantic memory—stable, generalized beliefs about their personality or how they typically feel.

Although daily experiences must somehow contribute to semantic beliefs, the latter are largely decontextualized from such experiences (Robinson & Clore, 2002a). Thus, people can quickly report that they are generally a happy *person* without retrieving concrete instances of their happy *experiences*. Thus short-term and global SWB are differentially informed by episodic and semantic memory, respectively. What remains unanswered is how people summarize their SWB over intermediate periods such as the past few weeks or months. In the present paper, these assessments of intermediate length are referred to as *retrospective* SWB. A better understanding of the processes underlying retrospective SWB has important implications. Research suggests that the transition from an episodic to a semantic retrieval strategy occurs for reference periods between the *past few weeks* and the *past few months* (Robinson & Clore, 2002b), though the nature of this shift is unknown. Is it an all-or-none shift (*only* episodic or *only*

semantic knowledge is used) or is it a mixture of both? An all-or-none shift would impose a boundary condition on the extent to which episodic memory informs SWB judgments.

Mechanisms Underlying the Link Between Daily Experiences and Retrospective SWB

Mediation by Episodic Memory

A possible mechanism linking daily experiences to retrospective SWB is episodic memory. Positive and negative events may not contribute to retrospective SWB unless people *remember* them when they make their judgment. Thus, episodic memory mediates the relation between daily experiences and retrospective SWB. This model is consistent with the order effects observed by Strack et al. (1988). It could also explain why global SWB is better predicted from events that people have *recently* experienced than those that occurred long ago (Suh, Diener, & Fujita, 1996): recent events are more likely to be recalled.

Episodic memory may affect retrospective SWB judgments in two ways. First, *how* events are remembered could influence judgments. Past events that are *remembered* more (or less) negatively than originally felt, could sway the judgment in the corresponding direction. Second, the subset of events that are remembered could influence judgments: recalling more positive than negative events should result in more positive assessments of retrospective SWB.

Perhaps because of its intuitiveness, the episodic mediation model has rarely been tested directly. Past studies measured episodic memory using free recall of events (e.g., Seidlitz & Diener, 1993), but did not obtain *prior* measures of experienced events. Without such measures, it is impossible to evaluate how the *memory* of events diverges from the original *experience* of these events, and if so, whether it is truly the former that ultimately influences retrospective SWB as posited by the episodic mediation model.

Recent-Past Representations

Daily experiences may also influence retrospective SWB through recent-past representations (RPRs). As positive and negative experiences accumulate over a period of time, people may develop abstract summary representations of "how things have been going." A major aspect of RPRs is their hedonic tone, which may be positive or negative overall, depending on the balance of experiences. In effect, RPRs summarize the overall pleasantness or unpleasantness of a given period of time (e.g., the past few weeks) and may share qualities of both episodic and semantic memory. RPRs may include knowledge of events that occurred during the period in question, but with less specificity than episodic knowledge. For example, a specific argument with one's spouse at a particular time and place would reflect episodic knowledge. In contrast, the knowledge that one has recently had *many* arguments with one's spouse and that the relationship has soured over the past month would reflect one's RPR. Thus, RPRs are semantic in that they are abstracted from concrete events, but episodic in that they are circumscribed within a particular period of time.

RPRs are akin to what other researchers have called *personal semantic memory* (Kopelman, Wilson, & Baddeley, 1989; Robinson & Clore, 2002a). Unlike general semantic knowledge (e.g., "The capital of China is Beijing"), personal semantic memory references a particular period of one's life (e.g., where one lived as a child). Such factual knowledge shares features of both episodic and semantic memory (Kazui, Hashimoto, Hirono, & Mori, 2003). Kazui et al. (2003) suggested that specific episodic knowledge may develop into personal semantic memory over time as the information (e.g., one's childhood address) is repeatedly recalled across contexts (e.g., in filling out paperwork, writing letters, etc.) and becomes dissociated from any specific episode.

Unlike personal semantic memory, which consists primarily of factual knowledge, RPRs

contain more subjective, hedonic elements such as how enjoyable the recent past has been. Nonetheless, RPRs may play a similar role in the formation of semantic knowledge from episodic knowledge. Frequent positive (or negative) experiences may gradually produce RPRs that are predominantly pleasant (or unpleasant). Such representations may provide an important route by which daily experience shapes retrospective SWB, *independently* of episodic memory.

Dispositional Causation

Past research has shown that SWB is consistently correlated with personality traits (DeNeve & Cooper, 1998; Heller, Watson, & Ilies, 2004). Costa and McCrae (1980) argued that traits such as extraversion and neuroticism *cause* SWB by predisposing people to experience positive and negative emotions. In its strongest form, the dispositional causation hypothesis states that daily experiences do not actually contribute to retrospective SWB. Instead, both experiences and retrospective SWB are produced by a top-down process driven by personality traits. To rule out this explanation, the present studies control for trait levels of happiness and neuroticism.

Retrospective SWB as a Critical Link Between Daily Experiences and Global SWB

The distinction between episodic and semantic memory underscores the divergent processes that people engage in when evaluating short-term versus global SWB. However, if the two memory sources are dissociable, it is unclear how *global* SWB arises from the everyday episodes that fill our lives. If global SWB is informed by semantic memory, and the latter is relatively more stable and resistant to change than episodic memory—how do *daily* experiences affect one's global SWB—or do they at all? Past research has shown that daily hassles are associated with self-reported health and global SWB (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982; Zika & Chamberlain, 1987). Thus, there is support for such a link, but a lack of

theoretical models that shed light on the underlying processes.

One such model is the mood-mediation model (Robinson, 2000) which posits that the accumulation of positive and negative daily experiences affects people's *mood states*, which in turn influences global SWB. This occurs because mood states serve a reactive function—they provide a hedonic summary of one's recent experiences and current life situation. Mood states also serve a prospective function—they indicate the potential direction in which one's life is headed. The conditions of the present and immediate future, in turn, affect global SWB.

The present research conceptually extends the mood-mediation model. I propose that the reactive and prospective function of mood-states apply more generally to retrospective SWB. Daily experiences do not only influence recent affective states, but also how *satisfied* people have been with their current situation. Retrospective SWB then influences global SWB. Therefore, the present research also tests the hypothesis that retrospective SWB mediates the relation between daily experiences and global SWB.

Overview of Hypotheses

The current project involves two objectives. The first is to clarify the memory processes underlying judgments of retrospective SWB. Unlike previous research that used one-time measures of event checklists (e.g., Robinson, 2000; Seidlitz & Diener, 1993; Suh et al., 1996), the present studies enabled participants to record specific, personally relevant events for a period of weeks and measured their episodic memory of these same events at a later time. Participants rated the emotional intensity of these events twice: (1) *proximal* intensity ratings were completed in close proximity to the occurrence of each event (within a few days); and (2) *distal* intensity ratings were completed at the end of the event-reporting period (participants were instructed to remember how they felt about the event when it happened). By comparing both sets of ratings,

one can examine whether memory of the events has changed over time and if so, whether these changes are related to retrospective SWB at the end of the study. The distal intensity ratings are consistent with Wheeler, Stuss, and Tulving's (1997) theory that episodic memory involves "mentally traveling back to *re-experience* the retrieved event [emphasis added]" (p. 332). However, in Study 2, participants also completed a free recall task with the frequency of recalled events providing an additional measure of episodic memory.

In contrast, RPRs were measured indirectly by computing the average *proximal* intensities of positive events minus those for negative events. This reflects the nature of RPRs as arising from the hedonic balance of positive and negative events that have accumulated over time, *irrespective* of whether individual events are consciously recollected. In addition, past research has shown that the preponderance of positive experiences over negative experiences predicts well-being more consistently than the average intensity or frequency of either measure alone (Larsen, Diener, & Emmons, 1985; Seidlitz & Diener, 1990).

Figure 1 summarizes the three possible mechanisms linking daily experiences to retrospective SWB. Each mechanism can be articulated as a specific hypothesis.

(Figure 1 about here)

Hypothesis 1 (Mediation by Episodic Memory): Over time, positive and negative experiences contribute to episodic memory, which then predicts retrospective SWB. This implies that paths *a* and *b* in Figure 1 are significant, and path *c* is not.

Hypothesis 2 (Recent-Past Representations Predict SWB): The balance of positive and negative experiences over time result in RPRs that are predominantly pleasant or unpleasant. These RPRs predict retrospective SWB independently of episodic memory and personality. This is implies that path *c* is significant.

Hypothesis 3 (Dispositional Causation): Both daily experiences and SWB are caused by dispositional variables. This implies that paths *d* and *e* are significant. A stronger form of this hypothesis further implies that paths *b* and *c* are not significant.

In addition, the mediating role of retrospective SWB was also tested.

Hypothesis 4: The balance of positive and negative experiences over time predicts retrospective SWB, which in turn, predicts global SWB. More formally, proximal intensity exerts a significant *indirect effect* on global SWB through retrospective SWB.

If Hypothesis 4 is supported, this would provide important evidence for the cumulative impact of daily experiences on global SWB.

Study 1

Method

Participants. Two hundred and twenty-nine students at a small Asian university were paid (up to Singaporean $56) for a three-week daily diary study. Participants were excluded if they dropped out (n=9), listed invalid entries (e.g., "nothing happened today") for over half of their event listings (n=10), or tended to give the same ratings across all their events (n=4). The final sample consisted of 206 students (121 female) with a mean age of 21.6 years.[1]

Materials and Procedure. Study 1 consisted of three phases.

***Phase 1*.** Students completed the personality measures in a one-hour survey session. Trait happiness was measured with the Subjective Happiness Scale (SHS; Lyubomirksy & Lepper, 1999), which consisted of four items (e.g., "In general, I consider myself…1 [*not a very happy person*] to 7 [*a very happy person*]). Neuroticism was measured with the International Personality Item Pool (NEO-PI-R Broad Domains, http://ipip.ori.org/newNEODomainsKey.htm). The scale consisted of ten items (e.g., "I worry

about things") rated from 1 (*very inaccurate*) to 5 (*very accurate*).

Phase 2. A few days after Phase 1, the 21-day event-reporting period began. At the end of each day (between 9pm and 3am), students logged into the study website and listed, in a randomized order, one positive and one negative event. Then they rated each event in terms of valence (1 = *extremely negative*; 10 = *extremely positive*) and their emotional reaction to the event on three 9-point bipolar scales with anchors of *extremely happy—extremely sad*, *extremely cheerful—extremely depressed*, and *extremely pleased—extremely upset*. The four event ratings were rescaled from 0 to 10 and then averaged into a single score for each event. Ratings for negative events were reverse coded so that higher scores reflected greater negativity. A *proximal intensity index* was created by subtracting the average intensity of the negative events from the average intensity of the positive events.

Phase 3. In a final computerized session, students completed measures of retrospective and global SWB. The retrospective SWB survey contained four scales referring to the past three weeks of the study (i.e., during Phase 2): (a) Overall Satisfaction (level of *satisfaction—dissatisfaction*, and how *terrible—excellent* the period was); (b) Domain Satisfaction (satisfaction with *school, relationships, health, finances, leisure, friends, family, romantic life, learning in courses, grades*, and *campus activities*); (c) Positive Emotions (extent to which one felt *happy, pleased, proud, affectionate, relaxed*, and *cheerful*); and (d) Negative Emotions (extent to which one felt *sad, upset, ashamed, angry, stressed*, and *depressed*). Satisfaction items were rated from 1 (*extremely dissatisfied*) to 7 (*extremely satisfied*); emotion items were rated from 0 (*not at all*) to 6 (*a great deal*). The global SWB items were identical to the retrospective items but referred to how participants felt "in general".

Next, in a randomized order, students were shown all the events they listed in Phase 2 (a

maximum of 42), and rated how they *remembered* feeling about each event the day it occurred. A *distal intensity index* was computed using similar items and procedures employed for the proximal intensity index. All SWB measures were administered *before* the distal ratings to avoid unduly influencing participants' episodic memory. Table 2 presents the descriptive statistics and reliabilities for all measures.

(Table 2 about here)

Results

Distal intensity did not differ from proximal intensity for positive events (*M*'s = 7.27 vs 7.33) or negative events (*M*'s = 6.81 vs 6.84), both *t*'s ≤ 1.00. Between-person correlations between distal and proximal intensities were quite high (*r*'s = .87 and .85 for positive and negative events respectively). Analyses were also conducted within-subjects at the level of individual events using hierarchical linear modeling (HLM). Again, mean-level differences were not significant for either positive events, $t(205) = 1.82$, $p = .07$, or negative events, $t(205) = 1.01$, $p = .32$. The average event-level correlation was .54 for positive events and .59 for negative events, both *p*'s < .001. This is notably smaller than the between-person correlations and suggests that memory for the average intensity *across* events is better than the specific intensity of each *individual* event. After subtracting negative ratings from positive ratings, all subsequent analyses were based on the proximal and distal intensity indices (see Method).[2]

Mechanisms linking daily experiences and retrospective SWB. Event intensities and personality traits correlated with retrospective SWB (Table 3) and significantly accounted for variance in the latter: overall satisfaction (40.0%), domain satisfaction (54.2%), positive emotion (PE; 43.8%), and negative emotion (NE; 35.2%), *p*'s < .001.[3]

(Table 3 about here)

Four path models were estimated—one for each SWB measure. All models are summarized in Figure 2. For example, proximal intensity predicted retrospective PE (path *c* = .47), which predicted global PE (path *g* = .76). The path from neuroticism to proximal intensity was not significant in any model and was dropped for the sake of parsimony. All path coefficients corrected for measurement error in the personality and SWB measures, using the reliability of each scale to estimate the amount of error variance.

(Figure 2 about here)

Fit statistics are presented in Table 4. With the exception of overall satisfaction, all models fit the data well as indicated by non-significant chi-square values and RMSEA's below .06 (Hu & Bentler, 1999). As discussed later, the model for overall satisfaction required an additional modification. For now, the initial models are used as a starting point to evaluate each of the proposed mechanisms linking daily experiences to retrospective SWB (paths *a* to *e2*).

(Table 4 about here)

Mediation by episodic memory. Although proximal intensity was significantly related to distal intensity (path *a*), the latter did not predict retrospective SWB as path *b* was not significant in any of the models. Moreover, dropping path *b* had little effect on model fit. The change in chi-square ($\Delta\chi^2$) for each model was not significant: overall satisfaction (0.00), domain satisfaction (0.19), PE (0.00), and NE (1.70), all *df*'s = 1, all *p*'s > .19. These results suggest that episodic memory does *not* mediate the effects of daily experiences on retrospective SWB.

Recent-past representations. With the exception of negative emotions, proximal intensity significantly predicted retrospective SWB. Path *c* was significant even after controlling for the effects of trait happiness, neuroticism, and distal intensity. (This holds true even when the path from neuroticism to proximal intensity is estimated). The increment in variance

accounted for by proximal intensity was significant for overall satisfaction (+6.2%), domain satisfaction (+8.2%), and PE (+5.6%), *p*'s < .001; but not NE (+0.1%), $p = .11$. These findings provide initial support for the hypothesis that RPRs contribute uniquely to retrospective SWB.

***Dispositional causation*.** There was mixed support for dispositional causation. In particular, trait happiness predicted daily experiences (path *d1*) and retrospective domain satisfaction and PE (path *e1*). In contrast, neuroticism did not predict proximal ratings, and only predicted retrospective NE and PE (path *e2*)—though the latter was unexpectedly in the positive direction. The stronger form of the hypothesis was also tested by dropping paths *b* and *c*. This alternative model assumes that the relation between proximal intensity and retrospective SWB can be fully accounted for by personality traits. This model had worse fit than the initial model; the increase in χ^2 was significant in all cases: overall satisfaction (+67.70); domain satisfaction (+88.71); PE (+44.05); and NE (+21.64); all *df*'s = 2, all *p*'s < .001.

Retrospective SWB as a mediator. Together personality traits, event intensities, and retrospective SWB accounted for significant variance in global SWB: overall satisfaction (62.1%), domain satisfaction (74.3%), PE (64.4%), and NE (69.8%), *p*'s < .001. Even after controlling for personality traits and event intensities, retrospective SWB accounted for additional variance in global SWB: overall satisfaction (+5.2%), domain satisfaction (+23.1%), PE (+23.0%), and NE (+32.9%), *p*'s < .001. The indirect effect from proximal intensity to retrospective SWB to global SWB was tested by computing the product of paths *c* and *g*. As such mediated effects are not always normally distributed, bootstrap analyses were conducted (Preacher & Hayes, 2008). For each model, 1000 bootstrap samples were generated and a bias-corrected 95% confidence interval (CI) was constructed around the indirect effect of proximal intensity. Significant indirect effects were observed for domain satisfaction (.31; .74) and PE

(.16; .58), but not NE (-.40; .07) as the latter CI includes zero.

The initial model for overall satisfaction was significantly improved by adding a path from proximal ratings to global satisfaction, $\Delta\chi^2(1) = -8.31$, $p = .004$. This model implies a direct effect of proximal intensity on global satisfaction and fit the data well, $\chi^2(4) = 3.60$, $p = .46$, *RMSEA* = 0.0, *RMSEA* 90% CI (0.0; 0.10). Bootstrap analyses performed on this modified model also revealed a significant indirect effect of proximal intensity through retrospective satisfaction, 95% CI(.11; .40). Thus the latter serves as a *partial* mediator.

Discussion

Personality traits, proximal intensity, and distal intensity all correlated with retrospective SWB (see Table 3). However, *after controlling for* proximal intensity and personality traits, distal intensity no longer predicted retrospective SWB. This result is inconsistent with the hypothesis that episodic memory mediates the relation between daily experiences and retrospective SWB. How participants consciously remembered past events did not predict retrospective SWB beyond the cumulative impact of those events as they were experienced.

Trait happiness and neuroticism were distinctively related to different components of SWB. Specifically, trait happiness tended to be a stronger predictor of PE and satisfaction, whereas neuroticism tended to be a stronger predictor of NE. This pattern replicates past findings linking positive and negative affect to distinct personality traits such as extraversion and neuroticism, respectively (Costa & McCrae, 1980; DeNeve & Cooper, 1998). Although there were effects of trait happiness on both proximal intensity and retrospective SWB, a model that assumed complete dispositional causation fit the data poorly. This finding supports the notion that people develop RPRs that are distinct from semantic personality knowledge and episodic knowledge of concrete events. Finally, retrospective SWB mediated the link between daily

experiences and all measures of global SWB except global NE. In general, the balance of positive and negative experiences predicts retrospective SWB (i.e., how people summarized their well-being over the recent past), which then predicts global SWB.

Study 2

One limitation of Study 1 was the relatively short three-week event-sampling period. Students' memory for how they felt about the events (on average) was relatively accurate over this period as distal intensity ratings correlated with proximal intensity ratings above .80 at the between-persons level. A greater amount of time between event reporting and distal ratings could allow for more change in memory and larger effects on retrospective SWB. In addition, the extent to which the distal intensity measure reflects episodic memory may be questioned. Participants were simply shown and asked to rate all the events they had listed in Phase 2. Thus, it is not clear which events participants may have *spontaneously* recalled and used to evaluate their SWB. Even worse, participants may have supplied ratings for events they had no recollection of—adding more error to the distal intensity ratings.

Study 2 was designed to address these limitations. The event-reporting period was extended from three weeks to two months, after which a free-recall procedure was introduced. Participants recalled as many events as possible *before* rating the distal intensity of all their events. Two additional procedures were added. First, participants indicated how *clearly* they remembered each event they listed so that poorly recollected events could be excluded from the distal intensity index. Second, after completing the distal ratings, participants were shown the events they listed during free-recall and asked to *match* these events to the ones that were entered during the event-reporting period. This made it possible to identify the number of positive versus negative events that were recalled. This recall frequency measure offered an alternate

measure of episodic memory based on *which* events people remember (i.e., mostly positive or mostly negative) and not *how* they remember those events.

Finally, two measures of retrospective SWB (immediate and delayed) were administered. The immediate retrospective measures were given in Phase 3 (following the event-reporting period). The delayed retrospective measures were given in Phase 4 (approximately one month after the event-reporting period). Both measures referenced the same two-month reporting period. The delayed assessment allowed for another test of the episodic mediation model. For example, it is possible that events that are freely recalled or clearly remembered in Phase 3 are also highly memorable. If so, such events should be particularly accessible and could influence retrospective SWB given a greater delay in time. If proximal intensity predicts even *delayed* retrospective SWB, this would imply that RPRs have some degree of stability, as they should if they reflect cumulative summaries circumscribed by a particular period of time.

Method

Participants. One hundred sixty-six students participated in a paid (up to Singaporean $64), four-month study. Participants were excluded if they dropped out (n=14), provided invalid entries for more than half of their event listings (n=6), or tended to give the same ratings across all their events (n=7). For example, some respondents provided extreme ratings for positive *and* negative emotions across *all* events. The final sample consisted of 139 students (91 females) with mean age of 21.3 years.

Materials and Procedure. Study 2 consisted of four phases.

Phase 1. Students completed the SHS and the IPIP Neuroticism scale in a one-hour survey session.

Phase 2. Over the next eight weeks, students logged into the study website every

Wednesday and Sunday. On Wednesdays, students listed two events (one positive and one negative) that occurred from Sunday to Tuesday. On Sundays, students listed two events that occurred from Wednesday to Saturday. Thus, the listing procedure attempted to capture events from both halves of the week. Students evaluated the proximal intensity of each event by rating its valence (1 = *extremely negative*; 11 = *extremely positive*) and how much the event made them feel *happy, pleased, sad,* and *upset* (0 = *not at all*, 6 = *a great deal*). These items were recoded and combined into proximal intensity index following similar procedures as Study 1.

Phase 3. The week after Phase 2, students attended a one-hour computerized survey session. First, they completed the immediate retrospective SWB measures, which referenced the past two months (i.e., Phase 2): Overall Satisfaction (see Study 1 for items); Domain Satisfaction (satisfaction with *health, finances, leisure, friends, family, romantic life, learning, grades,* and *progress in completing assignments*); Positive Emotions (extent to which they felt *happy, pleased, relaxed,* and *cheerful*); and Negative Emotions (extent to which they felt *sad, upset, angry,* and *stressed*). Response scales were identical to those used in Study 1.

Next, students were asked to recall the events they had listed over the past two months (a maximum of 32). They were given 3.5 minutes to enter their events, after which a message appeared on-screen instructing them to continue with the survey. This time limit was determined using past research as a guide. Seidlitz and Diener (1993) allowed three minutes each to recall positive and negative *life* events; thus their recall procedure spanned a total of six minutes. As the reference period for Study 2 was much shorter, a concern was that allowing too much time would result in a ceiling effect across participants. Feedback from three research assistants indicated that 3.5 minutes was sufficient time for them to recall and report meaningful events that occurred over the past two months.

Students then rated the distal intensity of all events listed in Phase 2. In a randomized order, they were instructed to remember how they felt about each event using the same five items from the proximal intensity measure. They also indicated whether their memory of the event was *clear* (the details and specific context in which it occurred are remembered), *vague* (some memory remains but the exact details are unclear), or whether they have *no memory* of the event (most details are forgotten).

The last task of the session consisted of a recall-matching task. Students were shown the events they had recalled earlier, along with the events they reported in Phase 2. They were instructed to match (if possible) each recalled event to at least one of the previously listed events. This made is possible to determine how many recalled events were originally reported as positive versus negative events.

Phase 4. Approximately 3 weeks after Phase 3, students reported their global SWB using the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), and modified versions of the domain satisfaction, PE, and NE scales used in Phase 3. Next, students completed the delayed retrospective SWB measure. To ensure that the same two-month period was referenced, the dates of the event-reporting period (January 13 to March 7, 2010) were presented throughout the measures.

Reliabilities and descriptive statistics for all measures in Study 2 are reported in Table 2.

Results

In Phase 3, students freely recalled 5.99 positive events and 5.70 negative events, $t(138) = 1.16$, $p = .25$. More positive events were marked as *clearly remembered* than were negative events (M's = 9.32 vs 7.97), $t(134) = 5.38$, $d = .44$, $p < .001$. On average, the distal intensity of positive events ($M = 8.25$) did not differ from proximal intensity ($M = 8.28$), $t < 1.00$. However,

the distal intensity of negative events (M = 7.70) overestimated the proximal intensity (M = 7.46), $t(138) = 5.17$, $d = .24$, $p < .001$. Between-person correlations were high for both positive ($r = .87$) and negative ($r = .84$) events. These analyses were repeated within-subjects using HLM. Replicating the between-person results, the distal intensity of negative events overestimated proximal intensity, $t(138) = 5.28$, $p < .001$; but no difference was found for positive events. As in Study 1, average event-level correlations were smaller than between-person correlations: r's = .51 for positive events and .57 for negative events, p's < .001.

All subsequent analyses employed the proximal and distal intensity indices with the latter computed from *clearly remembered* events only. Four more participants were excluded because they did not clearly remember any of their events. In addition, recall frequency (the difference in the number of positive versus negative events recalled) served as another measure of episodic memory (see Seidlitz & Diener, 1993, for a similar application).

Mechanisms linking daily experiences and retrospective SWB. Together, personality traits and event intensities significantly accounted for variance in *immediate* retrospective SWB: overall satisfaction (25.8%), domain satisfaction (29.9%), PE (32.6%), NE (25.3%); and *delayed* retrospective SWB: overall satisfaction (27.8%), domain satisfaction (31.3%), PE (28.9%), NE (20.4%), p's < .001. Intercorrelations among these variables are displayed in Table 3. Again, four path models were estimated (see Figure 3). These models employed personality traits, proximal intensity, and distal intensity (of clearly remembered events) as predictors of *immediate* retrospective SWB. All models fit the data well (see Table 4). Below, the three mechanisms are evaluated in light of these initial path models.

(Figure 3 about here)

Mediation by episodic memory. Distal intensity did not predict retrospective SWB in

any model. Further, dropping path *b* did not reduce the fit of any model. The $\Delta\chi^2$'s were: overall satisfaction (+0.02), domain satisfaction (+0.78), PE (+0.08), and NE (+0.23), all *df*'s = 1, all *p*'s > .37. These results are inconsistent with the episodic mediation model.

Recent-past representations. In all models, proximal intensity predicted retrospective SWB (path *c*) even after controlling for the effects of trait happiness, neuroticism, and distal ratings. The increment in variance accounted for by proximal intensity was as follows: overall satisfaction (+6.1%); domain satisfaction (+7.7%); PE (+5.4%); and NE (+4.1%), *p*'s < .01.

***Dispositional causation*.** Dispositional causation was only partially supported: trait happiness predicted both proximal intensity and retrospective SWB (except NE). However, after controlling for trait happiness, neuroticism predicted neither proximal intensity nor retrospective SWB. No support was found for the stronger form of dispositional causation as dropping paths *b* and *c* led to significantly *worse* fit across all models. The $\Delta\chi^2$'s were: overall satisfaction (+13.49), domain satisfaction (+16.86), PE (+12.94), and NE (+9.48), all *df*'s = 2, all *p*'s < .01.

Similar results were obtained when recall frequency was used in place of distal intensity: proximal intensity predicted immediate retrospective SWB, whereas recall frequency did not.

Retrospective SWB as a mediator. Together, personality traits, event intensities, and immediate retrospective SWB significantly accounted for variance in global SWB: overall satisfaction (41.0%), domain satisfaction (69.4%), PE (59.2%), and NE (38.6%), *p*'s < .001. The increment in variance accounted for by immediate retrospective SWB was also significant: overall satisfaction (+18.7%); domain satisfaction (+39.1%); PE (+28.1%); and NE (+14.4%), *p*'s < .001. Bias-corrected 95% CI's (derived from bootstrapping) revealed significant indirect effects of proximal intensity on global SWB (via retrospective SWB): overall satisfaction (.08; .40); domain satisfaction (.23; .64); PE (.05; .40); and NE (-.38; -.07). Thus, immediate

retrospective SWB significantly mediated the effects of proximal intensity on global SWB.

Predicting *delayed* retrospective SWB from personality and events. Given more time, episodic memory may predict retrospective SWB more strongly. To evaluate this possibility, the delayed retrospective measures were regressed on both proximal and distal intensity, controlling for trait happiness and neuroticism (Table 5, Model 1).

(Table 5 about here)

Proximal intensity predicted all delayed measures except NE (β = -.23, p = .06). Distal intensity did not predict delayed retrospective SWB. Interestingly, when recall frequency was substituted for distal intensity, the former predicted delayed retrospective SWB above and beyond proximal intensity and personality (Table 5, Model 2); only the effect on domain satisfaction was not significant (β = .11, p = .13).

Discussion

With few exceptions, proximal intensity predicted retrospective SWB beyond the effects of personality traits and distal intensity. In contrast, distal intensity did not predict retrospective SWB–even when ratings of poorly remembered events were excluded. This pattern of findings is inconsistent with the episodic mediation model. Moreover, proximal intensity and not distal intensity predicted *delayed* retrospective SWB. This result is particularly noteworthy given that the distal intensity ratings were completed closer in time to the delayed measures and should have been more accessible in participants' memory than the proximal intensity ratings. Nevertheless, the latter were still better predictors. This implies that RPRs have some degree of stability that is not fully accounted for by trait happiness and neuroticism.

Recall frequency was the only measure of episodic memory to predict retrospective SWB—but only for the delayed assessment (see General Discussion). Perhaps if participants

were given more time (> 3.5 minutes), the recall frequency measure would predict SWB more strongly. Although this possibility cannot be ruled out, recall frequency correlated significantly with immediate retrospective SWB (Table 3), suggesting that the amount of time was sufficient to capture meaningful differences in SWB. Nevertheless, future studies could investigate the optimal time for such recall tasks; such studies might also benefit from the increased power of a larger sample size (see Footnote 1). Finally, Study 2 provided additional support for the mediating role of retrospective SWB in linking daily experiences to global SWB. Retrospective SWB is informed by the cumulative impact of daily experiences, and shapes global SWB.

General Discussion

The present studies expand our understanding of how daily experiences relate to self-reported SWB, clarifying the role that memory plays in such judgments. The hypothesis that these experiences are mediated by episodic memory was rigorously tested and, somewhat surprisingly, was not supported. The results must be interpreted cautiously: it is *not* the case that episodic memory is unrelated to SWB. First, distal intensity ratings were significantly correlated with retrospective SWB. Only *after* controlling for proximal intensity was no relationship observed. Thus, the remembered intensity of past events is associated with retrospective SWB, but only to the extent that the memory *corresponds with* the original reactions to those events (i.e., proximal intensity). Discrepancies between distal and proximal intensity do not seem to bias retrospective SWB judgments. Second, under some conditions, an episodic retrieval strategy may still contribute to retrospective SWB. For example, in Study 2, recall frequency predicted delayed retrospective SWB. Perhaps when the reference period is somewhat removed or discontinuous with the present, episodic memory may be relied upon to outline the events that occurred during the period in question (but see Limitations).

Proximal Intensity Ratings as a Proxy for Recent-Past Representations

The significant effects of proximal intensity ratings on retrospective SWB suggest that—when aggregated over a period of time—they reflect RPRs, a knowledge structure that is distinct from episodic and semantic memory. Even when the assessment was *delayed*, retrospective SWB was better predicted from proximal intensity than distal intensity. This implies that RPRs are somewhat stable as they reflect the *cumulative* impact of recent experiences rather than any single event. It may seem counterintuitive that events can have emotional effects beyond the ability to consciously recall them. However, recent experiments have shown that amnesics exhibit mood effects from sad and happy film clips even after their factual memory of the clips had dissipated (Feinstein, Duff, & Tranel, 2010). Thus, there may be more to daily experiences than what people are able to explicitly remember about them. Aggregated proximal intensities may reflect past experiences more broadly than do distal intensities. Though both measures are highly correlated (*r*'s > .80), proximal ratings appear to capture something that distal ratings lack. One possibility is that our emotional reactions to events *during a given period of time* trigger a chain of subsequent events within the same period. An argument with a friend might produce negative mood, which then fosters procrastination with work and a hectic rush to meet deadlines two days later. These "collateral effects" would enter into the RPR for the period but might not be reflected in the distal intensity of the specific event (i.e., the argument).

Distal intensity ratings could also be influenced by situation-specific beliefs ("I was at a party so I must have been pretty happy"). According to Robinson and Clore (2002a), when some episodic details are lost, such beliefs should influence distal ratings more than one's personality. However, situation-specific beliefs may not exist for all situations. Moreover, given that such beliefs are specific to the nature of each event, they may not clearly bias ratings in any single

direction. This may explain why the residual variance in distal intensity (after partialing out proximal intensity) is not systematically related to retrospective SWB.

The Mediating Role of Retrospective SWB

Robinson and Clore (2002a) suggested that people shift retrieval strategies from episodic to semantic memory for retrospective judgments greater than the past three weeks. The results support this hypothesis—but also reveal that even for reference periods of two months (Study 2), semantic memory is not the only source of influence on retrospective SWB; RPRs explained additional variance. Independent of personality traits, people whose recent past experiences were more positive than negative tended to report greater retrospective SWB and ultimately greater *global* SWB. Thus, retrospective SWB provides a critical link between daily experiences and overall well-being (see also Robinson, 2000).

The significant indirect effect of daily experience on global SWB has important policy implications. First, global SWB measures are widely administered in national and cross-national surveys (Tov & Au, *in press*). Second, there is increasing interest in using such measures to inform public policy decisions (Diener, Lucas, Schimmack, & Helliwell, 2009; Diener & Tov, *in press*). In both cases, the assumption is that respondents' general feelings of happiness and life satisfaction reflect their experiences in society. However, if global measures are derived from people's semantic beliefs about their feelings rather than their daily experiences, then it is unclear whether public policy has *any* role in facilitating SWB. An undesirable implication is that global SWB is *solely* driven by top-down processes guided by personality traits. The present findings offer an alternative, bottom-up process that contributes to global SWB *independently* of trait happiness. Thus, policymakers interested in tracking the effects of new policy could administer retrospective SWB measures *after* the change has been implemented. Such measures

will be more sensitive to daily experience and ultimately predict global SWB.

Implications for the Validity of Self-Report SWB Measures

Schwarz and Strack (1991, 1999) proposed that SWB judgments are not reflections of stable internal states; rather they are constructed from information that is *cognitively accessible* at the time of assessment and deemed relevant to the judgment at hand. The present findings do not contradict the importance of cognitive accessibility. Regardless of which knowledge source informs SWB judgments (semantic, episodic, or RPRs), it must somehow be accessible to the person making the judgment. However, past research has not clearly articulated the extent to which information must be *consciously* accessible as the classic demonstration of order effects suggests (Strack et al., 1988). The lack of consistent effects for distal intensity and recall frequency indicates that this need not be the case. Moreover, the conclusion that SWB judgments do not reflect stable internal states is not supported by the present research. Even when assessment is *delayed*, retrospective SWB was predicted from proximal intensity of past experiences. This is not to deny that self-reported SWB is susceptible to context effects such as item order, mood, and social comparison (Schwarz & Strack, 1999). Nevertheless, a considerable amount of the variance in global SWB is accounted for by retrospective SWB and the latter is sensitive to the gradual accumulation of daily experiences even if those experiences cannot be fully recalled at a conscious level. These findings are in line with other studies suggesting that life satisfaction is influenced more by relatively stable sources of information than context effects (Schimmack & Oishi, 2005).

It should *not* be concluded from the above that global or retrospective SWB measures capture all we would want to know about well-being. Instead, what the above findings highlight is that different measures of SWB tap into distinct sources of knowledge. No single measure can

serve as the gold standard because validity depends on the purposes it will be used for. Because global SWB reflects daily experiences only indirectly and retrospective SWB reflects experiences at the level of RPRs, researchers and policymakers who are interested in momentary moods or concrete experiences should employ experience sampling methodology or other approaches such as the Day Reconstruction Method (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004). Likewise, though short-term measures reduce memory burden, they are less reflective of the stable factors (e.g., personality, life conditions, RPRs, etc.) that meaningfully contribute to SWB. A comprehensive assessment of well-being should tap into both global beliefs and momentary experiences and no one measure can do this (Diener et al., 1999).

One observation that deserves comment is the high latent correlation between retrospective and global domain satisfaction (*r*'s > .90 in both studies). These high correlations may indicate that a person who is *uniformly* satisfied across a range of domains is likely to be someone who is satisfied at a global level. Thus, retrospective domain satisfaction may reflect global satisfaction when such disparate items have been averaged into a single index.

Limitations

Given the young age of the sample (M = 21 years), the processes observed may not generalize to an older population for which memory for emotional intensity may be less accurate. Second, it could be that the emotional reactions measured by proximal ratings have already crystallized in memory and therefore do not change much at distal assessment. Experience sampling methods could be used to obtain online emotional reactions to events. A greater change in memory might then be captured by distal intensity ratings and predict SWB.

In Study 2, recall frequency predicted delayed but not immediate retrospective SWB judgments. This suggests that episodic memory may be involved in assessments of the

discontinuous past. Alternatively, other features of the delayed survey may have contributed to the effect. Although the same period was referenced, the phrasing of questions differed between immediate ("past two months") and delayed ("from January 13 to March 7") measures. The dates of the event-reporting period were presented to students at both sessions, but were more frequently displayed during the delayed assessment to ensure that students understood the reference period. This may have led some participants to think more about the particular events that transpired between the dates given, producing an effect for recall frequency. Thus, whether an episodic retrieval strategy is evoked by temporal discontinuity or explicit reference to dates awaits further clarification.

Conclusion

Daily experiences contribute to global SWB, albeit indirectly and independently of their explicit recollection. The present findings have important implications for policymakers as they suggest that everyday experiences *do* matter for global SWB. Therefore, policies that might broadly impact daily experiences *over the long run* (e.g., commute time, noise pollution regulations) could potentially boost or reduce overall happiness and life satisfaction. The key is to understand that such effects are not direct, but may operate indirectly by improving SWB over the recent past. Thus, any evaluation of policy changes could be aided by retrospective SWB or momentary assessments, as these will be more sensitive to recent, everyday experiences.

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Footnotes

1. In Study 1, excluded participants scored lower on global domain satisfaction (*M*'s = 4.07 vs 4.38), $t(219) = -2.00$, $p = .05$; and higher on distal ratings (*M*'s = 1.13 vs 0.46), $t(217) = 2.13$, $p = .03$, compared with included participants. In Study 2, excluded and included participants did not differ significantly on any variables. Analyses conducted on all participants with available data yielded the same results with one exception. In Study 2, recall frequency significantly predicted immediate retrospective satisfaction and domain satisfaction in the full sample—even after controlling for proximal intensity.
2. Regression models were also conducted predicting retrospective SWB measures from the four separate scores (proximal and distal ratings of positive and negative events), trait happiness, and neuroticism. In Study 1, proximal intensities of both positive and negative events were significant predictors for 3 of the 4 models. For retrospective negative emotions, only proximal negative ratings predicted. Distal intensities of positive and negative events were not significant in any model. In Study 2, there were a total of 16 regression models. For negative events, the effect of proximal intensity was significant ($p < .05$) in 15 models and marginal ($p < .10$) in one. For positive events, the effect of proximal intensity was significant in 10 models and marginal in two. Given the high correlation between proximal and distal ratings, it is important to note that multicollinearity increases when all four scores are entered as predictors. This inflates estimates of the standard errors involved in the significance tests. Thus, it may be worth noting that the beta was larger for proximal (versus distal) intensity of positive events in 4 of 6 cases in which the effects were not significant. In contrast, distal intensities were not significant in any of the models tested in Study 2—although the number of recalled

positive events significantly predicted greater immediate retrospective satisfaction (p = .04). In addition, across Studies 1 and 2, the adjusted R^2 values were similar whether separate scores or balance scores were used (often differing by 1-3% only). When proximal intensities were significant, the effects were always in the expected direction: positive events were positively associated with satisfaction and positive emotions, and negatively associated with negative emotion; the reverse was true for negative events.

3. All proportion of variance statistics reported were calculated via multiple regression due to the ambiguity of interpreting such statistics in path analysis and structural equation models (Hayduk, 1996).

Table 1.

Summary of Key Constructs and their Operationalization

Construct	Definition	Operationalization
Global SWB	Satisfaction and emotional experiences *in general*	Self-reported satisfaction, positive and negative emotional experiences *in general*
Retrospective SWB	Satisfaction and emotional experiences *over the past few weeks/months*	Self-reported satisfaction, positive and negative emotional experiences over the past few weeks (Study 1) or months (Study 2)
Semantic Memory	Stable, generalized beliefs about one's personality	Reflected in self-ratings of personality trait measures (see Dispositional Variables)
Episodic Memory	Conscious recollection of past events and how they were experienced	Average distal intensity ratings: How participants *remembered* feeling about the events they previously reported; collected near the end of the study
Recent-Past Representations (RPRs)	Abstract representations (in memory) that summarize the overall hedonic tone of the past few weeks/months	Average proximal intensity ratings: How participants felt about each event on the day they first reported it; collected each day (Study 1) or twice a week (Study 2)
Dispositional Variables	Personality traits that are seen as causing behavior and well-being (i.e., dispositional causation).	Self-ratings on trait happiness and neuroticism

Note. SWB = subjective well-being.

Table 2.
Descriptive Statistics and Alpha Reliabilities for All Measures

	Study 1			Study 2		
Variable	*Mean*	*SD*	*α*	*Mean*	*SD*	*α*
Trait Happiness	4.64	1.26	.87	4.72	1.14	.85
Neuroticism	3.02	0.83	.90	2.96	0.78	.90
Proximal	0.49	1.10	.90/.85[d]	0.79	0.90	.76/.73[d]
Distal[a]	0.46	1.08	.90/.87[d]	0.63	0.97	.82/.80[d]
Recall Frequency	--	--	--	0.30	2.99	--
Immediate Retrospective SWB[b]						
Overall Satisfaction	4.53	0.98	.83	4.46	0.93	.81
Domain Satisfaction	4.36	0.91	.88	4.28	0.86	.83
Positive Emotion	2.99	1.05	.85	3.47	0.98	.83
Negative Emotion	2.10	1.17	.88	2.90	1.06	.81
Global SWB						
Overall Satisfaction[c]	4.79	1.12	.79	4.39	1.15	.87
Domain Satisfaction	4.59	0.89	.87	4.35	0.86	.82
Positive Emotion	4.38	1.01	.85	3.43	1.05	.86
Negative Emotion	3.13	1.17	.88	2.33	0.97	.74
Delayed Retrospective SWB						
Overall Satisfaction				4.46	0.95	.86
Domain Satisfaction				4.32	0.89	.83
Positive Emotion				3.41	1.06	.88
Negative Emotion				2.71	1.14	.84

Note. Total sample sizes were 206 for Study 1 and 139 for Study 2.
[a]For Study 2, the distal intensity index was computed from clearly remembered events only.
[b]Retrospective SWB measures referenced the past three-weeks (Study 1) or the past two months (Study 2).
[c]A two-item measure was used in Study 1; the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) was used in Study 2.
[d]Alpha reliabilities were averaged across participants (via Fisher's r-to-Z transformation) and are reported separately for positive events/negative events.

Table 3.

Correlations among Variables in Studies 1 and 2

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Trait Happiness	--	-.68	.45	.26	.39	.42	.47	-.39	.44	.45	.53	-.39	.12
2. Neuroticism	-.61	--	-.45	-.27	-.33	-.32	-.40	.42	-.36	-.38	-.34	.45	-.14
3. Proximal	.48	-.35	--	.70	.48	.51	.52	-.42	.37	.47	.37	-.35	.33
4. Distal[a]	.40	-.34	.88	--	.31	.32	.35	-.26	.19	.24	.25	-.24	.17
5. Retro. SAT	.40	-.28	.62	.55	--	.67	.65	-.35	.62	.58	.49	-.25	.26
6. Retro. DOM	.50	-.34	.71	.62	.73	--	.70	-.22	.53	.82	.58	-.19	.22
7. Retro. PE	.50	-.26	.61	.52	.60	.72	--	-.16	.57	.60	.72	-.27	.19
8. Retro. NE	-.36	.51	-.45	-.44	-.52	-.41	-.21	--	-.25	-.28	-.18	.58	-.25
9. Global SAT[b]	.64	-.40	.65	.55	.63	.69	.64	-.39	--	.58	.51	-.29	.25
10. Global DOM	.54	-.37	.67	.61	.63	.85	.64	-.37	.77	--	.63	-.29	.17
11. Global PE	.57	-.29	.52	.46	.41	.55	.77	-.12	.66	.66	--	-.34	.11
12. Global NE	-.43	.57	-.39	-.39	-.42	-.36	-.18	.81	-.42	-.36	-.13	--	-.08
13. Recall Freq.	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes. Correlations below the diagonal are from Study 1 (*N* = 206); those above the diagonal are from Study 2 (*N* = 139).
Retro = Retrospective measure references the past three weeks (Study 1) or past two months (Study 2; immediate assessment); SAT = Overall Satisfaction; DOM = Domain Satisfaction; PE = Positive Emotion; NE = Negative Emotion; Recall Freq. = Recall Frequency (Study 2 only).
[a]For Study 2, the distal intensity index is computed from clearly remembered events only (N = 134).
[b]Global satisfaction consisted of a two-item measure in Study 1, and the Satisfaction with Life Scale (Diener et al., 1985) in Study 2.
All |*r*|'s greater than .17 are significant at $p < .05$.

Table 4.

Model Fit Statistics for Path Models Tested in Studies 1 and 2

Fit Statistic	SAT	DOM	PE	NE
Study 1				
χ^2(*df*=5)	11.91	6.79	6.63	6.13
p	.04	.24	.25	.29
RMSEA	.10	.05	.05	.05
RMSEA 90% CI	(.00; .16)	(.00; .13)	(.00; .13)	(.00; .12)
Study 2				
χ^2(*df*=5)	3.63	5.74	6.57	2.85
p	.60	.33	.25	.72
RMSEA	.00	.03	.05	.00
RMSEA 90% CI	(.00; .10)	(.00; .13)	(.00; .14)	(.00; .09)

Notes. SAT = Overall Satisfaction; DOM = Domain Satisfaction; PE = Positive Emotion; NE = Negative Emotion; RMSEA = root mean square error of approximation; 90% CI = 90 percent confidence interval.

Table 5.

Regression Models Predicting Delayed Retrospective Well-Being from Event Ratings and Recall Frequency

	SAT		DOM		PE		NE	
Predictor	*β*	*t*	*β*	*t*	*β*	*t*	*β*	*t*
Model 1 (N=134)								
Trait Happiness	.40	3.76**	.24	2.29*	.35	3.27**	-.17	-1.56
Neuroticism	.11	1.06	-.10	-0.98	.08	0.74	.10	0.87
Proximal	.31	2.74**	.37	3.29**	.35	3.04**	-.23	-1.94†
Distal	-.02	-0.23	-.05	-0.49	-.01	-0.05	-.06	-0.54
R^2		.28		.31		.29		.20
Model 2 (N=138)								
Trait Happiness	.34	3.44**	.23	2.38*	.32	3.30**	-.18	-1.68†
Neuroticism	.04	0.38	-.11	-1.16	.05	0.51	.10	0.92
Proximal	.24	2.75**	.29	3.43**	.28	3.27**	-.22	-2.36*
Recall Frequency	.22	2.91**	.11	1.57	.22	2.91**	-.19	-2.34*
R^2		.32		.33		.33		.24

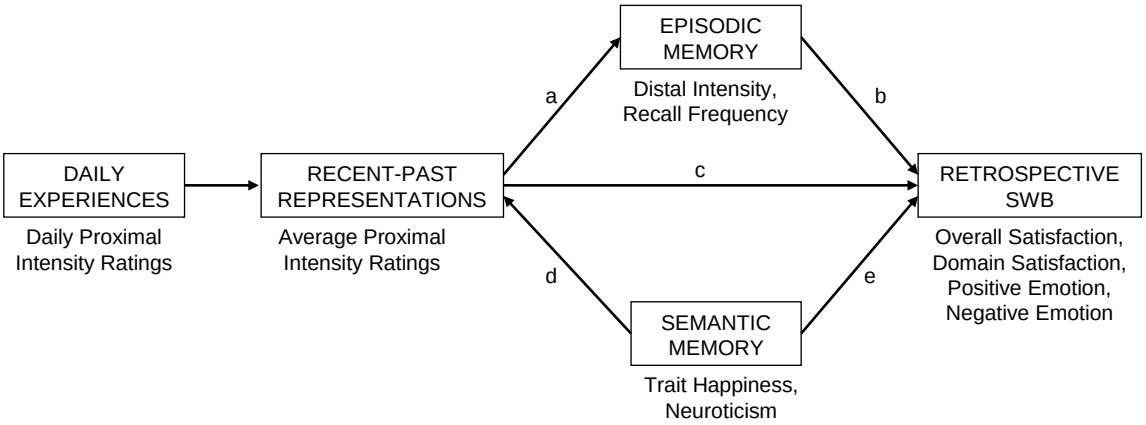
Note. SAT = Overall Satisfaction; DOM = Domain Satisfaction; PE = Positive Emotion; NE = Negative Emotion.
†$p < .10$. *$p < .05$. **$p < .01$.

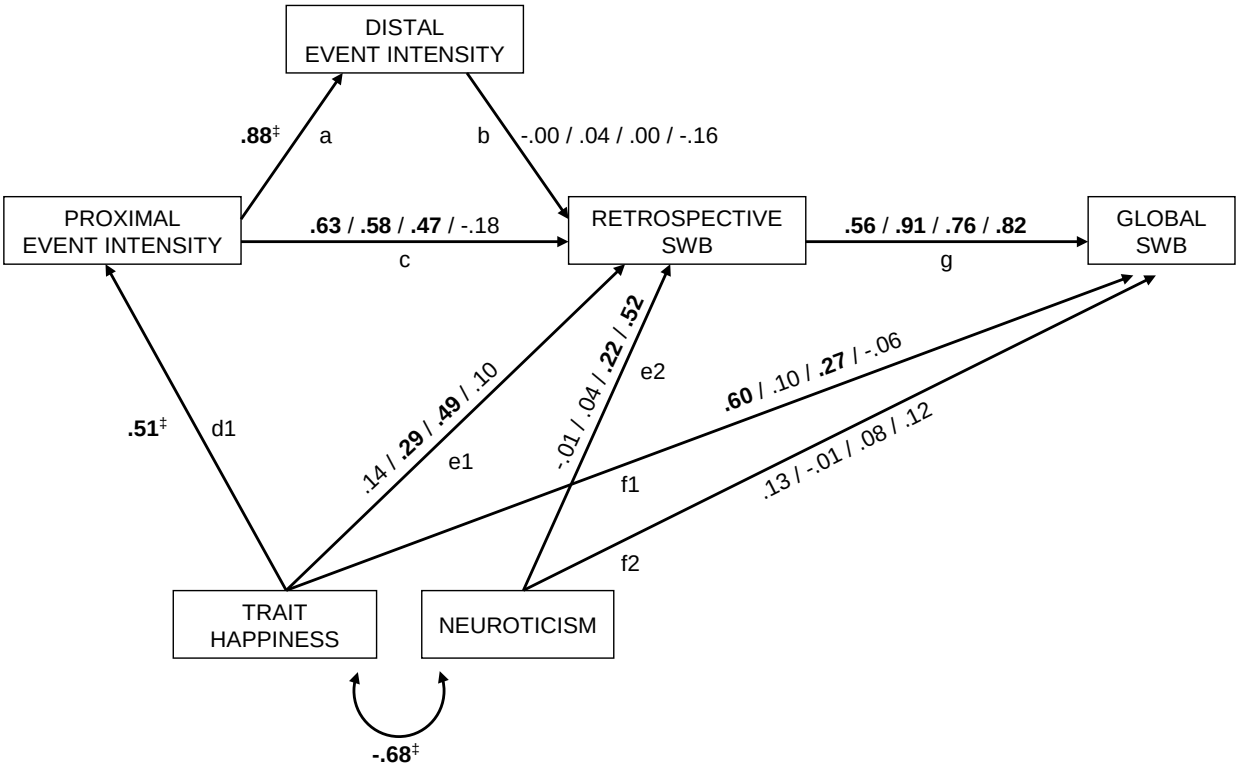
Figure Captions

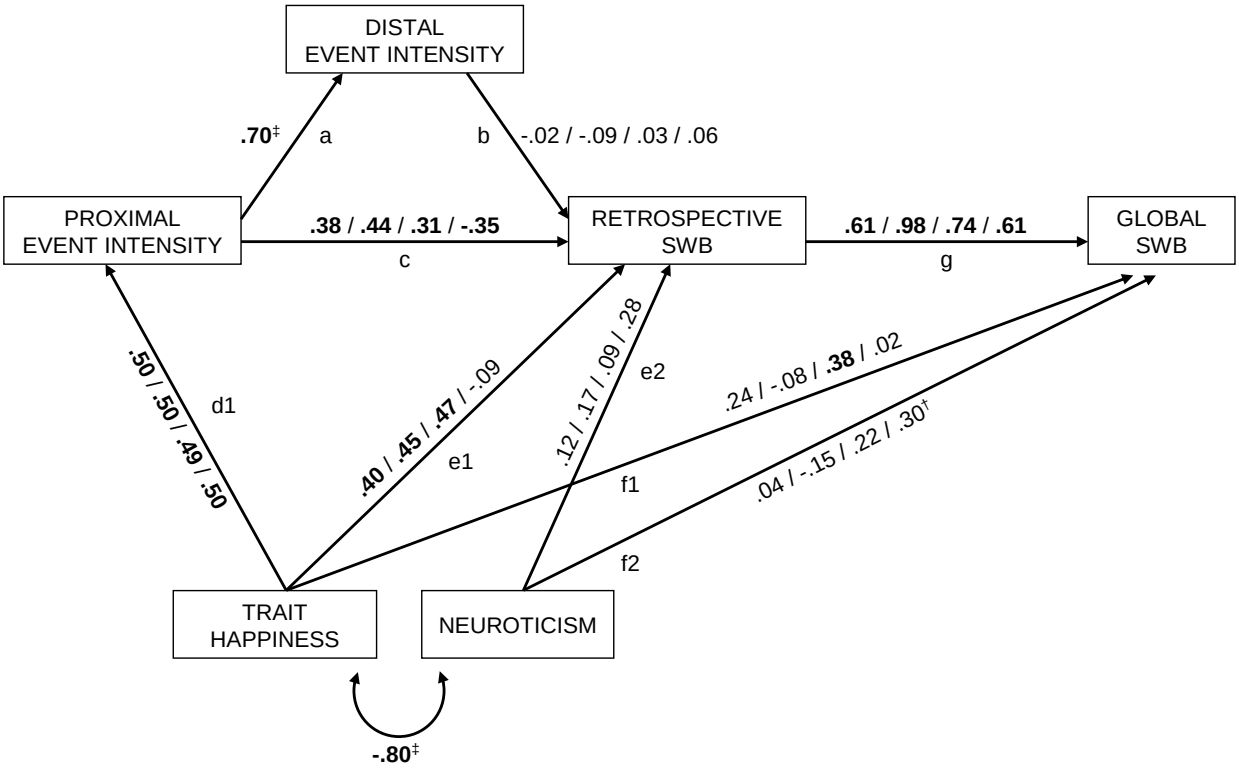
Figure 1. Possible mechanisms linking daily experiences to retrospective well-being.

Figure 2. Path models tested in Study 1. Path coefficients for each model are presented in the following order: Overall Satisfaction / Domain Satisfaction / Positive Emotion / Negative Emotion. Significant paths ($p < .05$) appear in bold. (‡Path coefficient is the same in all models.)

Figure 3. Path models tested in Study 2. Path coefficients for each model are presented in the following order: Overall Satisfaction / Domain Satisfaction / Positive Emotion / Negative Emotion. Significant paths ($p < .05$) appear in bold. (‡Path coefficient is the same in all models; $^{†}p < .10$.)


EPISODIC MEMORY
Distal Intensity, Recall Frequency
a
b
DAILY EXPERIENCES
Daily Proximal Intensity Ratings
RECENT-PAST REPRESENTATIONS
Average Proximal Intensity Ratings
c
RETROSPECTIVE SWB
Overall Satisfaction, Domain Satisfaction, Positive Emotion, Negative Emotion
d
e
SEMANTIC MEMORY
Trait Happiness, Neuroticism


DISTAL
EVENT INTENSITY
.88‡
a
b
-.00 / .04 / .00 / -.16
PROXIMAL
EVENT INTENSITY
.63 / .58 / .47 / -.18
c
RETROSPECTIVE
SWB
.56 / .91 / .76 / .82
g
GLOBAL
SWB
.51‡
d1
.14 / .29 / .49 / .10
e1
-.01 / .04 / .22 / .52
e2
.60 / .10 / .27 / -.06
f1
.13 / -.01 / .08 / .12
f2
TRAIT
HAPPINESS
NEUROTICISM
-.68‡


DISTAL
EVENT INTENSITY
.70‡
a
b
-.02 / -.09 / .03 / .06
PROXIMAL
EVENT INTENSITY
.38 / .44 / .31 / -.35
c
RETROSPECTIVE
SWB
.61 / .98 / .74 / .61
g
GLOBAL
SWB
.50 / .50 / .49 / .50
d1
.40 / .45 / .47 / -.09
e1
.12 / .17 / .09 / .28
e2
.24 / -.08 / .38 / .02
f1
.04 / -.15 / .22 / .30†
f2
TRAIT
HAPPINESS
NEUROTICISM
-.80‡