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Examining the within-person effect of affect on daily satisfaction ☆

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ABSTRACT

Assessments of global life satisfaction capture beliefs about overall well-being; state satisfaction assessments focus on short-term or "in-the-moment" appraisals of current life circumstances. Prior research has examined how trait measures of life satisfaction and affect are related at between-person and within-person levels of analysis. At the state level, however, a lack of clarity exists about the nature and magnitude of the association between satisfaction and affect. In a diary study involving assessments of both affect and satisfaction at the daily level ($N = 350$ with 6024 assessments), we found a consequential effect of affect on state satisfaction due to greater within-person variance over time.

1. Introduction

In contemporary psychological research, subjective well-being (SWB) is a key variable for assessing the quality of life of individuals (Eid & Diener, 2004). SWB comprises both affective (positive and negative emotional states) and cognitive (evaluation of one's satisfaction with life) components (Jayawickreme, Forgeard, & Seligman, 2012; Jayawickreme & Pawelski, 2013). Of note, the affective and cognitive components of SWB have different predictors and consequences (Diener, Ng, Harter, & Arora, 2010). In addition to this distinction between affective and cognitive well-being, SWB can also be assessed with trait and state (experiential) measures. Trait or global life satisfaction measures are posited to assess individuals' beliefs about the overall well-being of their lives; state satisfaction measures assess short-term or "in-the-moment" appraisals of their current life circumstances (Hudson, Lucas, & Donnellan, 2017). Past research has suggested that life satisfaction and affect are structurally distinct even when different timeframes are employed—that is, despite the similarity of state satisfaction and momentary affect measures, people are more likely to consider their global life circumstances when making life satisfaction judgments, even at the state level (Luhmann, Hawkley, Eid, & Cacioppo, 2012).

The question of the impact of positive and negative emotions have on life satisfaction has been a key focus of past research (e.g. Kuppens, Realo, & Diener, 2008; Schimmack, Diener, & Oishi, 2002; Schimmack, Radhakrishnan, Oishi, Dzokoto, & Ahadi, 2002; Schwarz & Strack, 1991; Suh, Diener, Oishi, & Triandis, 1998; Yap et al., 2016) and have formed the basis for the affect as information perspective (Schwarz & Clore, 2007; see also Kuppens et al., 2008). One issue stemming from this research involves concerns about the validity of measures assessing cognitive appraisals of well-being, as individuals may rely on current affect as a heuristic (Jayawickreme et al., 2012). For instance, Schwarz and Strack (1999) argued that individuals use their current mood as a parsimonious indicator of their cognitive well-being (e.g. reporting lower levels of life satisfaction on rainy compared to sunny days), unless the informational value of their affective state is questioned. The apparent primacy of affect in life satisfaction judgments has been empirically tested. Much of this research has explored the strength of the relationship between life satisfaction and affect as a between-person question; in other words, researchers have

☆ EJ, ET and TK conceptualized the study, TK collected the data, EJ, ET and TK prepared the data for analysis, ET performed the analysis, EJ, ET and TK wrote up the manuscript. We note that this study was not preregistered, although it represents a conceptual replication of Jayawickreme, Tsukayama, and Kashdan (2017). The first author may be contacted for details about the data used in this study.

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examined this effect as the proportion of overlapping variance between affect and life satisfaction at the between-person level (e.g. Diener, Fujita, Tay, & Biswas-Diener, 2012). In one study, Eid and Diener (2004) used latent state-trait models to partition the variance in life satisfaction at the state and trait level and found that the ("trait") consistency variance (about 80–90% of the variance) was higher than the occasion-specific variance (about 10–20% of the variance).[1] While Eid and Diener's occasion-specific analyses focused *across individuals within time points*, Jayawickreme et al. (2017) within-person analyses focused *within individuals across time points*, and found evidence for a relatively inconsequential effect of affect on life satisfaction, as there was relatively little within-person variance (9%) in trait life satisfaction over time (at least on a weekly basis over several weeks).[2] Jayawickreme et al. defined the effect as the percentage of variance in life satisfaction explained by changes in affect, and found that the effect on trait life satisfaction was relatively small: 4.2% for positive affect, 7.7% for negative affect, and 8.0% for the simultaneous influence of positive and negative affect.[3] It should be noted that this question is fundamentally a within-person question, and should be tested as one. This is because within-person approaches may reveal different answers from what between-person approaches reveal, since the causes for why variables may vary across people may be different from why they vary within a person across situations (Jayawickreme et al., 2017). However, the nature and magnitude of the within-person distinction between satisfaction and affect at the state level remains unclear.

1.1. The present study

The present study is a "systematic" replication of the Jayawickreme et al. (2017) study extending the results from the trait level to the state level. Luhmann et al. (2012) found affective and cognitive well-being to be structurally distinct even when using the same time frame (i.e. when assessing both types of well-being at the state level). Nevertheless, it is possible that we would expect a larger impact of affect with daily assessments of satisfaction. In other words, it may be that the within-person relationship for trait measures of satisfaction and affect may be distinct from the within-person relationship between state measures of satisfaction and affect, as state measures may be more sensitive to situational versus stable forces. To provide one such example from the personality psychology literature, individuals vary significantly in manifestation of personality states from situation to situation; on this view, depending on the context, an individual can act in a very extraverted, somewhat open, or moderately compassionate manner, irrespective of that person's trait standing (Fleeson, 2001, 2007).

As noted earlier, Jayawickreme et al. (2017) found a relatively small effect of affect on life satisfaction since there was not much change in trait life satisfaction over the five weeks of the investigation. This is theoretically sensible since global life satisfaction should not change much over relatively short timeframes (see Fig. 1a). However, in light of the above discussion we would predict more change for a state/daily measure of life satisfaction (see Fig. 1b) and thus a more consequential effect of affect, as individuals may be more susceptible to situational versus stable forces in making such judgments. To assess the impact of affect on momentary assessments of satisfaction, we employed a daily timeframe to assess life satisfaction. Here we assessed daily life satisfaction using two items assessing state satisfaction for 21 days as well as items assessing positive and negative affect.

2. Method

2.1. Participants

Participants were 350 college students (mean age = 22.9; *SD* = 7) from a large mid-Atlantic university who participated for course credit. Approximately 77% were female; 58% were White, 9% were Black, 11% were Asian, 11% were Hispanic, and 11% were of other ethnic backgrounds.

2.2. Measures

2.2.1. State satisfaction

Participants rated two items measuring their current satisfaction with life. The first item started with the stem "Today…" and asked participants to rate "On the whole, I was satisfied with myself" on a seven-point scale ranging from "Very uncharacteristic of me today" to "Very characteristic of me today." This item has been previously explored and validated in daily diary research (trait measure items with high factor loadings were reworded for experience-sampling) (Kashdan & Nezlek, 2012). This rewording included a specific focus on the day in the answer stem. This method of developing state-level analogs of trait measures has been used successfully in the past (see Kashdan & Nezlek, 2012, p. 1526). We also included a second item, which was a single adjec tive—"satisfied"—that participants rated on a seven-point scale ranging from "Did not feel this way at all" to "Felt this way very strongly." The estimated reliability was 0.90 at the between-person level and 0.72 at the within-person level.[4]

2.2.2. State affect

Participants rated five items assessing their daily positive affect (enthusiastic, excited, happy, calm, and relaxed), and six items measuring their daily negative affect (nervous, embarrassed, upset, disappointed, bored, and sad). These items were rated on a seven-point scale ranging from "Did not feel this way at all" to "Felt this way very strongly." For positive affect, the estimated reliability was 0.90 at the between-person level and 0.80 at the within-person level. For negative affect, the estimated reliability was 0.92 at the between-person level and 0.80 at the within-person level.

2.3. Procedures and analytic approach

To learn how to complete the online daily questionnaires, participants attended one hour training sessions. Participants were asked to complete their daily reports at the end of each day (before going to sleep). Throughout the study, participants received weekly email reminders. All instructions were available online for the study duration. The 350 participants provided 6024 daily entries (*M* = 17.2; *SD* = 5.4).

Participants were recruited in two similar but separate daily diary studies; the sampling procedure and daily diary methodology were identical across the two studies.[5] Before conducting our main

[1] Both Eid and Diener (2004) and the current investigation used latent variables to adjust for measurement error, so technically, the total variance was partitioned into three components: trait, state, and error. Because our focus is on the trait and state components, we focus our discussion on the trait and state components for parsimony and intelligibility.

[2] Although perhaps not readily obvious, within-person differences in a construct across time are changes in the construct.

[3] Following Jayawickreme et al. (2017), we use the term "effect" in a statistical, and not a causal, sense. Both Jayawickreme et al.'s and the current investigation's data were not from an experiment, so we cannot infer causality. However, our design, which examines within-person changes over time, does strengthen causal inference (see Duckworth et al., 2010).

[4] To estimate multilevel reliability (see Geldhof, Preacher, & Zyphur, 2014), we estimated multilevel confirmatory factor models and computed omega using the following formula: $\omega = (\sum\lambda)^2/[(\sum\lambda)^2 + \sum\psi^2]$.

[5] Analysis from these datasets have been previously reported in Kashdan et al. (2013), Kashdan and Nezlek (2012), and Pond et al. (2012). The analysis and variables of focus in these studies however differ from those of the present study.