

An experience-sampling measure of job satisfaction and its relationships with affectivity, mood at work, job beliefs, and general job satisfaction

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In this article, we proposed an experience-sampling method of measuring job satisfaction, assessed the contributions of average levels of mood at work and job beliefs to the prediction of job satisfaction, and examined the role of mood in mediating the relationship between affectivity and job satisfaction. The study involved a three-phase multisource longitudinal design that included experience-sampling surveys in the second phase of the study. Results suggested that average levels of experience-sampled job satisfaction indicate the general attitudinal construct of job satisfaction. As expected, pleasant mood at work and beliefs about the job made independent contributions to the prediction of job satisfaction (as measured with an overall evaluation and with an experience-sampling measure). In support of our mediation hypotheses, pleasant mood mediated the affectivity–job satisfaction relationship and the mediating effect was much stronger when job satisfaction was assessed with the experience-sampling method.

Traditionally, job satisfaction has been defined as an emotional reaction to the work situation (e.g., Cranny, Smith, & Stone, 1992; Locke, 1969, 1976). Perhaps the best-known definition of job satisfaction is Locke's contention that "job satisfaction is a pleasurable or positive emotional state resulting from an appraisal of one's job or job experiences" (Locke, 1976, p. 1300).

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Even though job satisfaction has been defined as an emotional state, like individuals' satisfaction with other life domains (e.g., marital satisfaction), job satisfaction is an attitudinal construct reflecting one's evaluation of his or her job. As for measuring job satisfaction, its emotional aspect has been generally underemphasized, compared to its cognitive aspect (e.g., Brief & Robertson, 1989; Fisher, 2000; Weiss, Nicholas, & Daus, 1999). Furthermore, job satisfaction has been generally measured with "single-shot", retrospective surveys that are better positioned to capture cognitive assessments of the job than affective experiences on the job (Ilies & Judge, 2002).

We contend here that the inconsistency between the traditional conceptual treatment (i.e., job satisfaction as an emotional reaction) and empirical measurement (focusing on cognition rather than on affect) of job satisfaction has led to a need to reevaluate the research paradigm for studying job satisfaction in two distinct yet related areas of research. First, as Weiss (2002; Weiss et al., 1999) points out, the assumed equivalence between job satisfaction as an affective or emotional state and as a general attitude about the job needs to be reevaluated. That is, organizational researchers need to distinguish between overall evaluations about the job, and affective experiences or reactions on or to the job (Weiss, 2002).

Second, in the context of the recent explosion of interest in the role of mood and emotions at work (e.g., Fisher & Ashkanasy, 2000; Fox & Spector, 2002; Lord, Klimoski, & Kanfer, 2002; Weiss, 2001), job satisfaction research has increasingly focused on affective antecedents and consequences of satisfaction; thus, it is particularly important to capture the affective component of job satisfaction when measuring it. Particularly illustrative of the renewed interest in the affect in the workplace is a recent stream of research focused on the study of momentary affective experiences as work. That is, organizational researchers have started to investigate short-term changes in affective states experienced at work (Alliger & Williams, 1993; Fisher, 2000; Fuller, Stanton, Fisher-McAuley, Spitzmüller, Russell, & Smith, 2003; Ilies & Judge, 2002; Judge & Ilies, in press; Weiss et al., 1999). Furthermore, job satisfaction itself exhibits nonrandom fluctuations across the working day and these fluctuations are in part driven by affect (mood at work; Ilies & Judge, 2002).

In this article we examine cross-sectional relationships between affectivity (trait-affect), mood, and job satisfaction; we are not investigating the processes that lead to short-term fluctuations in job satisfaction or the implications of these fluctuations in the present article. Such investigations are presented elsewhere (Ilies & Judge, 2002; Judge & Ilies, in press). We do believe, however, that measuring job satisfaction with a state approach can shed light on the interplay between affective experiences, beliefs about the job, and the general evaluation of the job situation. That is, we contend that

state measures of job satisfaction are better at capturing the affective component of job satisfaction than traditional, "one-shot" measures and thus such state measures are particularly well suited for studying affective correlates of job satisfaction. We do not want to imply that cognitions about the job should be neglected in favour of affect on the job, but rather that researchers need to study both affect and cognitions on and about the job, and their relevance to job satisfaction (see also Weiss, 2002).

The broad goal of this article is to study the influence of dispositions (trait-affect) and affective and cognitive processes, in combination, on job satisfaction. To gain new insight into the relative influence of affective and cognitive antecedents of job satisfaction we developed a job satisfaction measure formed by aggregating momentary reports and we examine its proprieties and compare this measure with a traditional measure of job satisfaction. Towards accomplishing our goal, we first review theories suggesting how mood, trait-affect, cognitions about the job and job satisfaction relate to each other, and propose and test hypotheses based on these theories. Second, on the basis of basic attitude theory and recent conceptual developments in job satisfaction research, we make a case that an aggregated measure of momentary job satisfaction more effectively captures the affective component of job satisfaction (compared with traditional measures) and, in consequence, can facilitate the study of causal relationships between job satisfaction and its affective antecedents or consequences.

AFFECTIVE AND COGNITIVE ANTECEDENTS OF JOB SATISFACTION

The traditional view of attitude structure is based on the influential tripartite model that assumes attitudes to have affective, cognitive, and behavioural components (e.g., Rosenberg & Hovland, 1960). More recently, basic attitude researchers have focused more intensely on disentangling the causal relations among attitudes and their affective and cognitive correlates (Olson & Zanna, 1993). That is, the affective, cognitive, and behavioural "components" of attitudes are now viewed as either *determinants* or *consequences* of these attitudes (Eagly & Chaiken, 1993; Olson & Zanna, 1993). To examine job satisfaction from this perspective, we study the impact of state affect (pleasant mood) and cognitions (job beliefs) on the formation of job satisfaction.

To model the relation between mood and job satisfaction, one first needs to decide on a measuring approach. For the purpose of the present investigation, we model mood by assessing the degree of pleasantness that characterizes the affective experience at any specific time. Typically, attitudes are assessed using a bipolar evaluation continuum by asking respondents to evaluate the attitudinal object in terms of favour or

disfavour, liking or disliking, or similar terms. More generally, evaluative responses can be placed on a continuum ranging from positive to negative evaluations (e.g., Eagly & Chaiken, 1993). We chose to represent mood with pleasantness because this basic dimension describes affective experiences on a similar continuum (ranging from positive to negative mood), and thus it is most promising in terms of predicting job satisfaction as a state.¹

Conceptually, basic mood mediates individuals' responses to work stimuli in terms of their satisfaction, and thus it should predict job satisfaction. Because the affective system is connected to individuals' sensitivities to reward and punishment (Watson, Wiese, Vaidya, & Tellegen, 1999) and because—according to Judge and Larsen's (2001) stimulus–organism–response model—experienced affect reflects individuals' responses to stimuli from the work environment, individuals' affective appraisal of their job (i.e., the affective component of job satisfaction) will be realized through the affective states they experience in response to these stimuli. In addition, basic mood also influences the cognitive component of job satisfaction through affect-cognition congruency effects (e.g., Blaney, 1986; Bower, 1981; see Ilies & Judge, 2002). Previous research has found solid empirical support for the effects of both trait and state affect (mostly negative state affect) on job satisfaction (for a comprehensive review, see Thoresen, Kaplan, Barsky, Warren, & de Charmont, 2003) and evidence for the effect of aggregated momentary measures of mood at work on job satisfaction has started to accumulate as well (Fisher, 2000; Ilies & Judge, 2002; Judge & Ilies, in press; Weiss et al., 1999).

Job beliefs, as conceptualized in this article, are appraisals of the job situation and represent individuals' assessment of what their job provides them (e.g., security, salary, recognition, etc.). Analysing job satisfaction from the perspective of Locke's (1969) value-percept theory that defines satisfaction as a function of what one wants from a job and what one perceives oneself as receiving (what one believes his or her job provides), it becomes apparent that job beliefs should have a direct positive effect on job satisfaction. In addition to the direct effect of beliefs on job satisfaction, beliefs can also have an indirect effect on job satisfaction (through mood) because beliefs (and job cognitions in general) can both influence experienced affect (mood) and be influenced by it (Judge & Larsen, 2001). Thus, mood and beliefs should have both direct (independent) and mediated effects on job satisfaction. Support for the independent effects of mood and beliefs on job satisfaction is limited to one study based on a small simple size ($N = 24$). Weiss et al. (1999) have shown that average levels of momentary pleasant

¹We did not include the activation–deactivation dimension in this investigation because it is not considered relevant to the study of job satisfaction (Weiss et al., 1999).

mood at work, and beliefs about the job, had distinct effects in predicting overall job satisfaction (assessed with a typical “one-shot” survey).

Given the conceptual mechanisms linking mood, beliefs and job satisfaction and the initial support for the effects of mood and beliefs on job satisfaction obtained by Weiss et al. (1999), we expect that:

H1: Pleasant mood and beliefs about the job will make independent contributions to the prediction of overall job satisfaction.

EXPERIENCE-SAMPLED JOB SATISFACTION

Eagly and Chaiken (1993) define an attitude as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (p. 1) and conceptualize an attitudinal evaluative tendency as “an evaluative state that intervenes between certain classes of stimuli and certain classes of responses . . . and it is assumed to account for covariation between these stimuli and these responses” (p. 3). Translating this basic view to the workplace, we define job satisfaction as a latent evaluative tendency of one’s job that accounts for the covariation between work stimuli and responses and is manifested through discrete evaluative states during the working day. It follows that this latent evaluative tendency construct can be measured either by asking employees to make a global evaluative judgement about their job (e.g., Weiss, 2002), or by assessing employees’ discrete evaluative states on multiple occasions during work, which can be accomplished with experience-sampling designs (Ilies & Judge, 2002).

Experience sampling methodology involves asking participants to report momentary experiences or subjective feeling states, or to record momentary measures of physiological variables, and eliminates the process of recall or summarization, which can be problematic due to selective memory processes (Alliger & Williams, 1993; Larson & Csikszentmihalyi, 1983). Though the methodology has been used in both general (Eckenrode, 1984; Hormuth, 1986; Larsen, 1987; Wood & Brown, 1994) and applied studies (Alliger & Williams, 1993), it has only recently been used in job satisfaction research.

Ilies and Judge (2002), in the first study that measured job satisfaction with an experience-sampling approach, found that job satisfaction measured this way indeed fits the nomological network established by traditional research measuring job satisfaction with general evaluative judgements (it displayed the expected pattern of correlations with neuroticism, extraversion, and positive and negative affect). These authors have concluded that average levels of experience-sampled job satisfaction are a reasonable indicator of the overall job satisfaction construct but, in fact, they did not measure job satisfaction with a general evaluative statement to examine the convergence between overall job satisfaction and the experience-sampling

measure. Here, we investigate the convergence between overall evaluations of the job (i.e., overall job satisfaction) and an experience-sampling measure of job satisfaction. We expect the two measures to be substantially correlated. Furthermore, to eliminate the alternative explanation that the two measure correlate because of mood (i.e., experience-sampled job satisfaction assesses nothing more than pleasant mood at work), we expect the two job satisfaction measures to be significantly correlated even when the effects of pleasant mood are partialled out. Therefore:

H2: Averaged experience-sampled job satisfaction will be correlated with overall job satisfaction and the correlation will remain significant when the effects of averaged experienced-sampled pleasant mood are partialled out.

If the experience-sampling measure of job satisfaction is indeed indicative of the general attitude of job satisfaction (H2), then we expect average pleasant mood, beliefs about the job, and average experience-sampled job satisfaction to display the same pattern of relationships as average pleasant mood and job beliefs display with overall job satisfaction (H1):

H3: Averaged experience-sampled pleasant mood and beliefs about the job will have independent contributions to the prediction of averaged experience-sampled job satisfaction.

Furthermore, we believe that mood states are more proximal predictors of state evaluations of the job (they are manifested at same time level) than they are of general evaluations of job satisfaction. Thus, we would expect a stronger relationship between averaged experienced-sampled mood and job satisfaction when measuring job satisfaction with the experience sampling method than when measuring job satisfaction with the general measure. In addition, the independent contribution of averaged experience-sampled pleasant mood (over job beliefs) should be stronger when job satisfaction is measured with the experience-sampling approach, versus when job satisfaction is measured with the general evaluative measure. We investigate these issues on an exploratory basis.

AFFECTIVE TRAITS, MOOD, AND JOB SATISFACTION

Judge and Larsen (2001) start their article on the dispositional source of job satisfaction with the statement: “One of the best exemplars of the renewed interest in the role of emotions and affective processes in the workplace is the literature on the dispositional source of job satisfaction” (pp. 67–68). These

authors concluded that one of the areas most in need of future research is “an explication of the underlying theoretical processes that account for the observed relationships among personality, affect, and job satisfaction” (p. 68). We attempt to contribute to this research area by investigating the mediating effect of mood in explaining the relationship between affectivity and job satisfaction.

A substantial amount of empirical evidence points toward a relationship between affective traits and job satisfaction (see Judge & Larsen, 2001; Thoresen et al., 2003), but only scattered evidence of a relationship between job satisfaction and momentary affect experienced at work exists (e.g., Fisher, 2000; Ilies & Judge, 2002; Judge & Ilies, in press; Weiss et al., 1999). Conceptually, because affectivity traits are indicative of people’s general tendencies to experience certain affective states (e.g., Judge & Larsen, 2001; Watson et al., 1999), and given that affective experience is intimately linked to momentary evaluations of the job situation (Ilies & Judge, 2002), it follows that a likely psychological process that explains the affectivity–job satisfaction relationship is the experience of affective states during the working day.

Affective traits control peoples’ propensities to experience certain mood states and emotions at work, and these affective experiences influence state-evaluations of the job situation that indicate the broader attitude of job satisfaction. With respect to the two distinct methods of measuring job satisfaction (experience-sampling and overall evaluation), because mood is manifested and measured at the same level as is state job satisfaction, we logically expect mood to be a stronger mediator of the affectivity–experience-sampled job satisfaction relation as compared with the affectivity–overall job satisfaction one. Thus:

H4: (a) Pleasant mood will mediate the relationship between affectivity and job satisfaction; (b) the mediation effect will be stronger when job satisfaction is measured with the experience-sampling measure.

EXPERIENCE-SAMPLING RATINGS OF JOB SATISFACTION IN CROSS-SECTIONAL ANALYSES

Finally, some practical considerations about the experience-sampling method of measuring job satisfaction are in order. Obviously, the method is absolutely necessary in investigations that include within-individual analyses of job satisfaction (e.g., Ilies & Judge, 2002). We believe that experience-sampled job satisfaction is also useful in cross-sectional analyses, especially in investigations that include trait or state affect because the measure is proximal to affective experiences that we view as mediators of the affectivity–job satisfaction relationship (H4).

When using experience-sampled job satisfaction in cross-sectional analyses, multiple state measures are averaged to form a composite score indicative of the general attitude, which is considered to be stable at least over the period of experience-sampled assessments.² It then becomes important, especially for designing studies that test cross-sectional models exclusively, to establish approximate guidelines with respect to the minimum number of experience-sampled job satisfaction measures that form a good indicator of general satisfaction. We attempt to provide such guidelines by examining the relationships between a composite score formed by averaging various numbers of state satisfaction scores, a similar pleasant mood composite, and overall job satisfaction. Because they are measured at the same level, we do not expect the relationship between the experience-sampled job satisfaction and the pleasantness composites to vary much with the number of individual scores comprising the composites. But we do expect the relationship between experience-sampled and overall job satisfaction to become increasingly stronger as more state scores enter into the experience-sampling composite.

METHOD

Participants

Participants were 33 employees from two state universities. These individuals were selected through an email letter soliciting participation that was sent to a random sample of the employees listed in the email directories of these universities. The sample included administrative personnel with diverse positions such as secretary, office manager, web designer, program coordinator, and associate director. Participation in the study was completely voluntary.

Procedure

The data collection process was conducted in three phases. In the first phase, participants completed a measure of affectivity, and also asked a significant other to rate their affectivity using the same measure. We obtained self and other ratings of affectivity for all participants in the study.

The second phase started, on average, 1 week after participants completed the affectivity measure. For phase 2, we used interval-contingent experience-sampling methodology (Ilies & Judge, 2002; Wheeler & Reis, 1991), having the employees report their momentary mood and job

²In cross-sectional analyses, within-individual variations across time are treated as transient errors and aggregation of state measures is used in order to control for the attenuating effects of this type of measurement error.

satisfaction three times a day, for two weeks. These data were collected through an internet interface. Subjects logged on to a web page and were first presented with a job satisfaction survey. Upon completion of the job satisfaction survey, participants completed an adjective-based mood survey. The order in which the mood adjectives appeared in the survey was randomized across occasions.

Participants were asked to complete on-line surveys at 9 a.m., 12 p.m., and 3 p.m. on each working day of the study, and the electronic interface was programmed to accept the data for each designated time only once within a 2 hour window and to record the exact time of data submission (e.g., the 9 a.m. data was accepted between 8 a.m. and 10 a.m.). We obtained 682 sets of experience-sampled ratings of job satisfaction and mood, which is equivalent to an overall response rate across all individuals and time periods of 77%.³

The third phase of the study was conducted two months after the completion of the second phase. In the third phase, participants were asked to respond to an overall job satisfaction questionnaire, and to report their beliefs about their job. All 33 participants completed the surveys included in the final phase of the study.

Measures

Pleasant mood. Mood was assessed with an adjective-based survey. We measured momentary pleasant mood with the adjectives: *happy*, *cheerful*, *joyful*, *delighted*, *sad* (reverse coded), *blue* (reverse coded), and *downhearted* (reverse coded). Instructions asked respondents to enter a number from 0 = not at all to 6 = extremely much in the fields adjacent to each adjective to estimate the extent to which the adjective described their momentary mood. The internal consistency of the mean ratings was .83.

Affectivity. In order to be consistent with the way in which we measured mood, we operationalized affectivity as trait pleasantness. Following Watson (2000), who defines affective traits as “stable individual differences in the tendency to experience a corresponding mood state” (p. 144), we define trait pleasantness as an affective trait that reflects differences among individuals in the experience of pleasant emotions and moods. We assessed trait pleasantness with a survey containing the same adjectives included in the pleasant mood scale described above. As mentioned, we used both self-ratings and rating provided by significant others. To measure trait

³On one weekday of the study the respondents did not work because it was a national holiday. Thus, there were a maximum of 9 (days) × 3 (daily surveys) × 33 (participants) = 891 experience sampling surveys.

pleasantness, respondents were instructed to indicate the extent to which they (or the people they were rating) *generally* experience the feelings described by these adjectives.⁴ Ratings were provided on a 7-point scale ranging from 1 = extremely slightly to 7 = extremely strongly. We averaged the self- and other-rated item scores before computing the scale scores. The internal consistency of the averaged item scores was .90.

Experience-sampled job satisfaction. State or experience-sampled job satisfaction was measured with a five-item version of the Brayfield and Rothe (1951) measure. The scale was administered with momentary time instructions (e.g., “at this very moment I am fairly satisfied with my job”) and ratings were obtained on a 5-point scale ranging from 1 = strongly disagree to 5 = strongly agree. Internal consistency, computed on within-individual mean item ratings, was .93.

Overall job satisfaction. We used the five-item measure of overall job satisfaction described by Weiss et al. (1999). This measure includes the Faces Scale (Kunin, 1955) and the following four items: “All in all I am satisfied with my job”, “In general I don’t like my job” (reverse scored), “In general I like working here”, and “ I frequently think of quitting this job” (reverse scored). The faces measure was rated on an 11-point scale (participants were asked to circle the number below the face that most accurately expresses how they feel about their job in general). For the remaining four items, participants were asked to indicate the extent to which they agreed to each statement on a 7-point scale (1 = strongly disagree, 7 = strongly agree). The internal consistency of this scale was .92.

Job beliefs. We followed Weiss et al. (1999) and asked participants to rate the extent to which their job is instrumental in obtaining 12 work outcomes (prestige, security, friendship, salary, promotion, recognition, self-esteem, independence, personal growth, self-fulfilment, accomplishment, and feelings of authority) on a 5-point scale ranging from 1 = strongly disagree to 5 = strongly agree. The internal consistency of the scores was .84.

Analyses

We used correlation and observed-variable regression and path analysis to test the hypotheses. The first three hypotheses were tested with regression

⁴This measurement approach is similar to the use of the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988) to measure either state or trait affect, depending on the instructions given to respondents (e.g., Watson, 2000).

(H1 and H3) and correlation (H2) analysis. The final hypothesis (H4) was tested with a series of path models. These analyses were cross-sectional, thus, for the time-sampled variables, we used the average score for each individual who participated in the study.

To test the mediation hypothesis, we estimated two path models: a fully mediated model, assuming that pleasant mood completely mediates the relationship between affectivity and job satisfaction, and a partially mediated model, which included a direct effect from trait pleasantness to job satisfaction, in addition to the indirect effect through pleasant mood. To assess model fit, we present two indices that perform relatively well in testing models estimated on modest sample sizes like ours: the normed fit index (NFI) and the comparative fit index (CFI) (e.g., Pugh, 2001). In addition, we present the standardized root mean square residual (SRMR).

Finally, to estimate the minimum number of momentary ratings of job satisfaction that has satisfactory validity in indicating overall job satisfaction, we computed composites of experience-sampled job satisfaction and pleasant mood scores that reflected an increasing number of consecutive momentary ratings. Then we computed the average correlations between experience-sampled job satisfaction and pleasant mood composites, and between the experience-sampled job satisfaction composites and the overall satisfaction scores. For example, we obtained 26 sets of composites formed by two state ratings (two-ratings composites): We first average individuals' responses over the first two ratings, then over the second and third ratings, and so on. We then obtained 26 zero-order correlation coefficients by correlating each set of 2-ratings experienced-sampled job satisfaction composites with the corresponding set of 2-ratings composites of pleasant mood. Averaging these 26 coefficients gave the average correlation between experienced-sampled job satisfaction and pleasant mood 2-ratings composites. Similarly, to obtain the average correlation between 2-ratings composite experienced-sampled job satisfaction and overall satisfaction, we first computed 26 zero-order correlation coefficients by correlating each 2-ratings composite score sets with the overall job satisfaction scores, and then we averaged these 26 coefficients. This way we obtained the average correlations between the n -ratings experience-sampling job satisfaction composite and (a) the n -ratings pleasant mood composite, and (b) the overall job satisfaction score, with n varying from 1 to 26.⁵

⁵This analysis is similar to, and was inspired by, Watson's (2000) analysis of the stability of mood composite scores as a function of the number of adjacent daily mood scores entering the composite (Table 5.1, p. 147).

RESULTS

Table 1 presents the means, standard deviations, and intercorrelations for all study variables. The overall job satisfaction measure was strongly and significantly correlated with both beliefs about the job, $r = .72, p < .01$, and average pleasant mood, $r = .59, p < .01$. The first hypothesis (H1) specifies that beliefs about the job and average pleasant mood have independent contributions to the prediction of overall job satisfaction. As it can be seen in Table 2, which presents the regression results for predicting overall job satisfaction with these two variables, the standardized regression coefficients for average pleasant mood, $\beta = .31, p < .05$, and job beliefs, $\beta = .57, p < .01$, were both significant. Thus, H1 was supported.

The second hypothesis (H2) conveyed our expectation that the experience-sampling measure of job satisfaction is related to overall job satisfaction and this association remains significant when pleasant mood is partialled out. Indeed, the average level of experience-sampled job satisfaction was strongly correlated with overall job satisfaction, $r = .59, p < .01$. When the effects of pleasant mood were partialled out, the correlation between the two job satisfaction measures was reduced by almost 40%, but remained significant, $r = .36, p < .05$. Thus, H2 was supported.

TABLE 1
Means, standard deviations, and intercorrelations for all study variables

	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Trait pleasantness	32.12	6.03	1.00				
2. Pleasant mood	25.84	5.44	0.42*	1.00			
3. Experience-sampled job satisfaction	17.81	3.11	0.39*	0.61**	1.00		
4. Overall job satisfaction	26.88	8.09	0.59**	0.59**	0.59**	1.00	
5. Beliefs about the job	3.37	0.61	0.57**	0.48**	0.62**	0.72**	1.00

$N = 33$. * $p < .05$ (two-tailed); ** $p < .01$ (two-tailed).

TABLE 2
Regression of overall job satisfaction on average pleasant mood and job beliefs

<i>Predictor</i>	<i>Beta</i>	<i>t</i>	<i>Significance</i>	<i>R</i> ²
Pleasant mood	.31	2.35	$p < .05$	
Job beliefs	.57	4.34	$p < .01$.60

$N = 33$. Tests are two tailed. R^2 was significant at $p < .001$ ($F = 22.37$).

Hypothesis H3 tests whether the independent effects of pleasant mood and beliefs about the job in predicting job satisfaction replicate when job satisfaction is measured with the new experience-sampling measure. Table 3 shows the regression results for predicting average experience-sampled job satisfaction with average pleasant mood and job beliefs. The standardized regression coefficients were significant for both predictors, $\beta = .41, p < .01$, and $\beta = .42, p < .01$, for pleasant mood and job beliefs, respectively, which supports the third hypothesis (H3).

The last hypothesis (H4) predicted that average pleasant mood would mediate the relationships between affectivity, operationalized as trait pleasantness, and job satisfaction, and that the mediation effect will be stronger when job satisfaction is measured with the experience-sampling measure. To test such mediation effect, we estimated two distinct path models: a fully mediated model and a partially mediated model. Each of these models was estimated on covariance matrices that included (a) the overall job satisfaction scores, or (b) the averaged experience-sampled job satisfaction scores, in addition to the trait pleasantness and the average pleasant mood scores.

The fully mediated model fit the data rather poorly when job satisfaction was measured with the overall measure, $SRMR = .14$, $NFI = .72$, $CFI = .73$, thus we do not present the parameters estimated by this model. Next, we estimated the partially mediated model, which allows a direct relationship between trait pleasantness and job satisfaction in addition to the indirect effect mediated by pleasant mood, on the same covariance matrix. Figure 1 shows the standardized values and significance levels of the path coefficients estimated by the partially mediated model, using overall job satisfaction. Of course, because the partially mediated model is saturated, no fit tests are provided. Pleasant mood mediated almost one third (30%) of the total effect of trait pleasantness on overall job satisfaction, and the mediation effect was significant.

When individuals' average score on the experience-sampling measure was used as the observed job satisfaction score, the fit of the fully mediated model was rather good, $SRMR = .05$, $NFI = .95$, $CFI = 1.00$. This model

TABLE 3
Regression of experience-sampled job satisfaction on average pleasant mood and job beliefs

<i>Predictor</i>	<i>Beta</i>	<i>t</i>	<i>Significance</i>	<i>R</i> ²
Pleasant mood	.41	2.81	$p < .01$	
Job beliefs	.42	2.86	$p < .01$.51

$N = 33$. Tests are two tailed. R^2 was significant at $p < .001$ ($F = 15.60$).

is shown in Figure 2. For point of comparison, we also estimated a partially mediated model, which is presented in Figure 3. The parameter estimates for this second model show that direct effects of trait pleasantness on averaged experience-sampled job satisfaction was weak and not significant, as one could have predicted from the good fit of the fully mediated model. Thus, these results suggest that most of the variance trait pleasantness share with averaged experience-sampled job satisfaction is mediated by pleasant mood. In sum, the general pattern of results was supportive of the final hypothesis

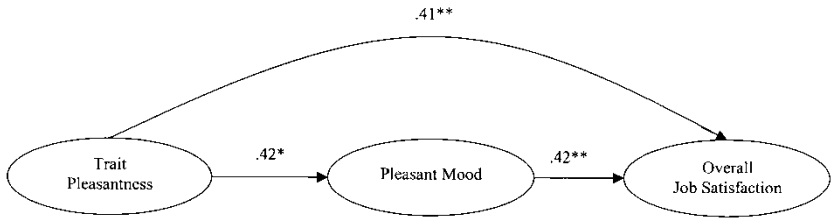


Figure 1. Path model testing the mediating effect of pleasant mood on the relationship between trait pleasantness and overall job satisfaction with the partially mediated model.



Figure 2. Path model testing the mediating effect of pleasant mood on the relationship between trait pleasantness and averaged experience-sampled job satisfaction with the fully mediated model.

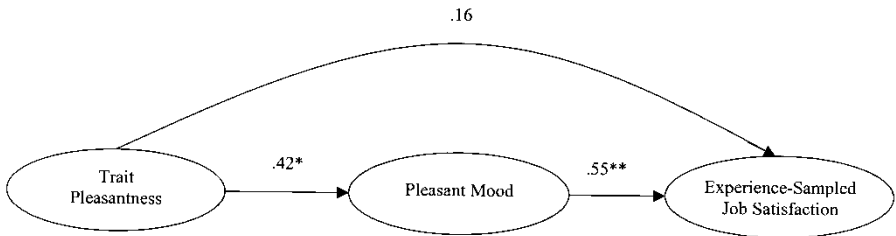


Figure 3. Path model testing the mediating effect of pleasant mood on the relationship between trait pleasantness and averaged experience-sampled job satisfaction with the partially mediated model.

(H4). These data suggest that pleasant mood mediates the effect of trait pleasantness on job satisfaction (H4a) and the mediation effect is much stronger when job satisfaction is measured with the experience-sampling measure (H4b).

Our final analysis attempted to estimate the minimum number of experience-sampled ratings of job satisfaction needed to satisfactorily predict overall job satisfaction. In Figure 4 we plotted the average correlation coefficient between the experience-sampled job satisfaction composite score with increasing number of momentary ratings entering the composite and (a) the same type of pleasant mood composite score, and (b) the general job satisfaction score, as a function of the number of momentary ratings entering the composite scores.

As Figure 4 shows, the correlation between the experience-sampled job satisfaction and pleasant mood composites hovers between .55 and .60, and its pattern of variation does not seem to depend on the number of momentary ratings used. In contrast, the correlation among experience-sampled job satisfaction and overall job satisfaction is generally increasing with the number of ratings used, from .40 for a single momentary job satisfaction rating to between .55 and .60 when the number of ratings exceeds 10. Thus, it seems that most gains in terms of validity occur when

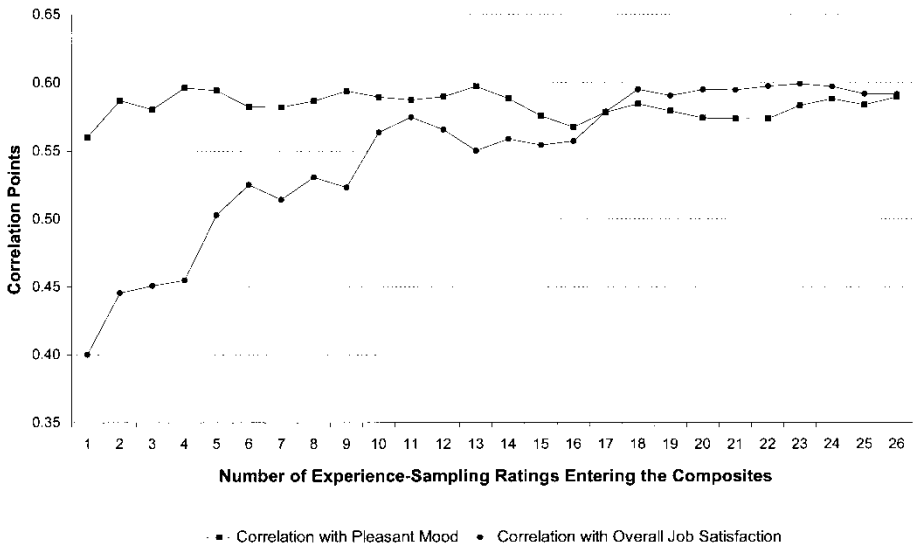


Figure 4. Plot of the average correlation between the experience-sampled job satisfaction composite and (a) the pleasant mood composite, and (b) overall job satisfaction, as a function of the number of experience-sampled ratings entering the composite.

aggregating between 2 and 10 ratings of state job satisfaction, with little to be gained when the number of ratings further increases. Based on these data, we suggest that a minimum of 10 experience-sampled ratings of job satisfaction should be used when forming experience-sampled satisfaction composite scores to be used in cross-sectional analyses.

DISCUSSION

We have found that the experience-sampled job satisfaction measure was a valid predictor of general job satisfaction. Furthermore, like the overall measure, experience-sampled job satisfaction was independently predicted by average pleasant mood and job beliefs but pleasant mood was a stronger predictor of experience-sampled job satisfaction than it was of the overall measure. Pleasant mood mediated the relationship between trait pleasantness and job satisfaction and it did so more strongly when job satisfaction was assessed with the experience-sampling measure. This pattern of results led us to conclude that the experience-sampling measure is more proximal to affective experience, or, in attitude theory terms, is more affect-based (as compared to the overall measure).

Contribution

We believe this article makes two main contributions to the applied literature on attitudes in general and to the job satisfaction literature in particular. First, we have proposed an experience-sampling measure of job satisfaction and have provided initial evidence for its validity and usefulness. Given the recent interest in investigations of affective and emotional experiences at work across time, we believe that the new method of measuring job satisfaction will prove to be a useful tool for those who engage in such research. Furthermore, the new method should appeal to those investigating cross-sectional relationships between job satisfaction and its affective correlates or affective processes involving job satisfaction. More specifically, experience-sampling job satisfaction should be useful in the study of processes such as affective reactions to feedback, emotional contagion or in studying consequences of emotional intelligence, due to the proximity of state evaluations of the job to emotional and affective experience.

Second, we have advanced job satisfaction theory and provided supportive evidence for the view of affect and cognition as antecedents of job satisfaction, and for the contention that the experience of affect and emotion throughout the working day is an important mediating process that explains the affectivity–job satisfaction relation documented in previous research. Our results add to the accumulating evidence on the relationship

between momentary affective experiences at work and job satisfaction (Fisher, 2000; Ilies & Judge, 2002; Judge & Ilies, *in press*; Weiss et al., 1999), and, to the extent that job satisfaction represents a modulated response to work stimuli, these results offer support for Judge and Larsen's (2001) stimulus-organism-response model. Future research should conduct more comprehensive tests of this model by studying the effects of actual work events on emotions, mood, and job satisfaction to investigate whether affect mediates the effect of work events on job satisfaction and whether individual differences moderate individuals' sensitivities to positive and negative stimuli in terms of their experienced affect.

With respect to the independent effects of pleasant mood and job beliefs in predicting job satisfaction, we have replicated the findings of Weiss et al. (1999) (a) in a different sample, and (b) with a different measurement approach. Given that results presented by Weiss et al. were based on a sample comprising 24 people, such replication was needed. Furthermore, by showing that pleasant mood predicts the experience-sampling measure of job satisfaction more strongly than it predicts the traditional overall measure, we offer initial evidence for the proximity of experience-sampled job satisfaction and affective experience at work. The path analysis results showing pleasant mood to be a stronger mediator of the affectivity–job satisfaction relationship when job satisfaction is assessed with the experience-sampling approach (as compared with the overall evaluation) further consolidate our belief in the proximity of experience-sampled job satisfaction and affective experience.⁶

We defined job satisfaction as an evaluative state that should explain the covariation between work input variables (situations) and outputs (behaviours). Then, what can the experience-sampling measuring approach add in terms of predicting behaviour? Basic attitude research suggests that the strength of the attitude–behaviour relationships depends on the match between the type of the informational base of the specific attitude and the type of behaviour linked to it (Millar & Tesser, 1986, 1989). That is, affect-based attitudes should better predict consummatory (emotion-driven) behaviours, whereas cognition-based attitudes should better predict instrumental (cognition-driven) behaviours. It follows that experience-sampled job satisfaction should predict consummatory behaviours better than overall

⁶An alternative explanation for the stronger effects of pleasant mood on the experience sampling measure would reflect the fact that mood and momentary job satisfaction were measured at the same time. First, we did average both pleasant mood and job satisfaction ratings across occasions, which should alleviate, at least in part, this concern. Second, in our view, such measurement timing effect does not exclusively reflect a measurement artifact but also a substantive issue: Because mood is transitory, measuring job satisfaction in the work environment with experience-sampling measures captures its affective aspect better than retrospective ratings.

satisfaction would, whereas overall job satisfaction should better predict instrumental behaviours.

In terms of work performance, Rotundo and Sackett (2002) provide evidence of three major domains of job performance—task, citizenship, and counterproductive behaviour. Citizenship and counterproductive behaviours are likely driven by emotional impulses (Spector & Fox, 2002), whereas traditional task behaviours are more likely to be influenced by cognition. It follows that experience-sampled job satisfaction, due to its affective base, is better suited for predicting voluntary behaviours, while the more traditional overall measures are most useful in predicting task behaviours. Furthermore, if attitudinal tendencies mediate the impact of dispositional (personality) characteristics on behaviour, experience-sampled job satisfaction should be a stronger mediator of the relations between affective personality traits (e.g., neuroticism and extraversion; Pytlik Zillig, Hemenover, & Dienstbier, 2002) and citizenship and counterproductive behaviours, whereas overall job satisfaction should more strongly mediate the relation between established personality predictors of task performance (i.e., conscientiousness; Barrick & Mount, 1991) and task behaviours. The data presented in this article cannot speak to such speculations; future research should investigate these issues.

In a general sense, this research suggests that managers should pay increased attention to the impact of work events on employees' moods and emotions. As shown in this article, affective experiences at work influence job satisfaction, which can have further effects on important organizational outcomes such as performance or intention to leave. In addition, given the solid evidence for the effects of negative affective states on employees' psychological responses to the demands of their jobs reported in the literature (e.g., the strong effect of negative affect on emotional exhaustion, $r = .54$; Thoresen et al., 2003), paying attention to events that influence employees' moods and emotions at work would benefit employee's general well-being as well.

We have found that, as we expected, employees' beliefs of what their job provides them strongly influenced their job satisfaction ratings (both the overall and the experience-sampled measure) and this effect was distinct from the effect of mood. This finding clearly shows that both affect and cognition are important for job satisfaction. Like other authors (e.g., Fisher, 2000; Weiss, 2002), we believe that traditional "one-shot" job satisfaction inventories mostly measure the cognitive component of job satisfaction and are less able to capture affective job satisfaction. Based on the results presented here, we also believe that experience sampled job satisfaction has something to offer for the development of new, more balanced (in terms of capturing affect and cognition), "one-shot" satisfaction measures. With respect to measuring employees' affective states and experiences, Fisher

(2000, p. 199) states that “clearly, experience-sampling does get at real-time affect, uncontaminated by memory and recall biases” and further recommends that “perhaps ESM-based measures should provide the criterion against which easier-to-use single-administration scales of job affect are validated”. Similarly, when developing new “one-shot” measures for assessing the affective component of job satisfaction, comparing these measures with experience-sampled job satisfaction in terms of their relationships with affective states and traits may be useful in assessing their validity.

Directions for future research

Basic attitude theory offers several suggestions that merit investigation in organizational settings. For example, the role of attitude strength (typically conceptualized as accessibility; Kraus, 1995; Petty, Wegener, & Fabrigar, 1997) in moderating attitude–behaviour consistency has been an area of intense investigation in basic attitude research (e.g., Petty & Krosnick, 1995; Petty et al., 1997). These findings suggest that the accessibility of the job satisfaction attitude—which can be measured with response latencies—may moderate the relations between job satisfaction and work behaviours. Measuring job satisfaction with the experience-sampling approach over the internet, as we did in the present study, makes such investigations possible in the field, with experience-sampling surveys that track response latencies.⁷

One other variable that has been found to moderate the relations between attitudes and behaviours in basic settings may be worth investigating at work: attitude stability (Kraus, 1995; Petty et al., 1997). The moderating effect of attitude stability on the job satisfaction–work behaviours relations can be investigated with experience-sampled assessments of job satisfaction and by operationalizing attitude stability as the variability in job satisfaction state scores across time. Ilies and Judge (2002) have shown that the within-individual standard deviation of experience-sampled job satisfaction scores was strongly predicted by neuroticism, $r = .72$, $p < .01$. It may be the case that the stability of experience-sampled job satisfaction both mediates the relationship between neuroticism and consummatory behaviours and moderates job satisfaction–job behaviours relations. In our view, these are certainly issues that merit investigation.

⁷Measuring experience-sampled job satisfaction at multiple times would give multiple response latency measurements, which would lead to more reliable assessments of attitude accessibility.

Limitations

Several limitations of this study deserve mention. First, like other studies that involved experience-sampling assessments (Ilies & Judge, 2002: $N = 27$; Weiss et al., 1999: $N = 24$), our sample size was rather small, which limited the statistical power of our analyses. Furthermore, the small sample size potentially limits the generalizability of our results. Second, though we conceptualize job satisfaction as an evaluative tendency of the job situation, no situational variables were included in this study. Clearly, comprehensive investigations assessing variables included in situational models of job satisfaction (e.g., job characteristics model; Hackman & Oldham, 1980), in addition to person variables (affectivity, mood, and beliefs) can make additional contributions to the literature on job attitudes. Third, our measurement approach assumed job beliefs were relatively stable (at least over the duration of this study), which allowed us to test between-individual effects of beliefs on averaged experience-sampled satisfaction even though job beliefs were measured after the experience-sampling satisfaction ratings were provided. To the extent to which beliefs vary across time, our methodology treated such variations as measurement error (transient error), which potentially biased the results concerning job beliefs downward (Schmidt, Le, & Ilies, 2003). Lastly, one methodological limitation inherent in the data collection procedure must be acknowledged. Most data collected for this study consist of self-report responses to surveys or adjective-based checklists, which raises the possibility that mono-method bias inflated the correlations among study variables. We attempted to address this potential concern when designing the study by (a) including significant other reports of affectivity, and (b) measuring affectivity, the experience-sampled variables, and the overall evaluations at different points in time.

CONCLUSION

This study adds to our understanding of the psychological mechanisms that blend affective and cognitive antecedents in forming job satisfaction evaluations, and proposes a method of assessing job satisfaction—the experience-sampling method—that should facilitate future research on the relations of job satisfaction with its affective and cognitive antecedents and behavioural consequences. The true test of the new experience-sampled job satisfaction measure will come from assessing its contribution to predicting work-related outcomes reflecting consummatory behaviours such as organizational citizenship or workplace deviance behaviours. Until then, the results described in this article attest to the usefulness of the experience-sampled job satisfaction measure in cross-sectional research. This evidence,

coupled with the necessity and utility of assessing job satisfaction as a state for within-individual analyses (Ilies & Judge, 2002), speaks to the versatility of the experience-sampling method.

REFERENCES

- Alliger, G. M., & Williams, K. J. (1993). Using signal-contingent experience sampling methodology to study work in the field: A discussion and illustration examining task perceptions and mood. *Personnel Psychology, 46*, 525–549.
- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*, 1–26.
- Blaney, P. H. (1986). Affect and memory: A review. *Psychological Bulletin, 99*, 229–246.
- Bower, G. H. (1981). Mood and memory. *American Psychologist, 36*, 129–148.
- Brayfield, A. H., & Rothe, H. F. (1951). An index of job satisfaction. *Journal of Applied Psychology, 35*, 307–311.
- Brief, A. P., & Robertson, L. (1989). Job attitude organization: An exploratory study. *Journal of Applied Social Psychology, 19*, 717–727.
- Cranny, C. J., Smith, P. C., & Stone, E. F. (1992). *Job satisfaction: How people feel about their jobs and how it affects their performance*. New York: Lexington Press.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich College Publishers.
- Eckenrode, J. (1984). Impact of chronic and acute stressors on daily reports of mood. *Journal of Personality and Social Psychology, 46*, 907–918.
- Fisher, C. D. (2000). Mood and emotions while working: Missing pieces of job satisfaction. *Journal of Organizational Behavior, 21*, 185–202.
- Fisher, C. D., & Ashkanasy, N. M. (2000). The emerging role of emotions in work life: An introduction. *Journal of Organizational Behavior, 21*, 123–129.
- Fox, S., & Spector, P. E. (2002). Emotions in the workplace: The neglected side of organizational life introduction. *Human Resource Management Review, 12*, 167–171.
- Fuller, J. A., Stanton, J. M., Fisher-McAuley, G., Spitzmüller, C., Russell, S. S., & Smith, P. S. (2003). A lengthy look at the daily grind: Time series analysis of events, mood, stress, and satisfaction. *Journal of Applied Psychology, 88*, 1019–1033.
- Hackman, J., & Oldham, G. (1980). *Work redesign*. Reading, MA: Addison-Wesley.
- Hormuth, S. E. (1986). The sampling of experiences in situ. *Journal of Personality, 54*, 262–293.
- Ilies, R., & Judge, T. A. (2002). Understanding the dynamic relationship between personality, mood, and job satisfaction: A field experience-sampling study. *Organizational Behavior and Human Decision Processes, 89*, 1119–1139.
- Judge, T. A., & Ilies, R. (in press). Affect and job satisfaction: A study of their relationship at work and at home. *Journal of Applied Psychology*.
- Judge, T. A., & Larsen, R. J. (2001). Dispositional source of job satisfaction: A review and theoretical extension. *Organizational Behavior and Human Decision Processes, 86*, 67–98.
- Kraus, S. L. (1995). Attitudes and the prediction of behavior: A meta-analysis of the empirical literature. *Personality and Social Psychology Bulletin, 21*, 58–75.
- Kunin, T. (1955). The construction of a new type of job satisfaction measure. *Personnel Psychology, 8*, 65–77.
- Larsen, R. J. (1987). The stability of mood variability: A spectral analytic approach to daily mood assessments. *Journal of Personality and Social Psychology, 52*, 1195–1204.

- Larson, R. S., & Csikszentmihalyi, M. (1983). The experience sampling method. In H. R. Reis (Ed.), *New directions for methodology of social and behavioral science: Naturalistic approaches to studying social interaction* (Vol. 2, pp. 41–46). San Francisco: Jossey-Bass.
- Locke, E. A. (1969). What is job satisfaction? *Organizational Behavior and Human Performance*, 4, 309–336.
- Locke, E. A. (1976). The nature and causes of job satisfaction. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1297–1349). Chicago: Rand McNally.
- Lord, R. G., Klimoski, R. J., & Kanfer, R. (2002). *Emotions in the workplace: Understanding the structure and role of emotions in organizational behavior*. San Francisco: Jossey-Bass.
- Millar, M. G., & Tesser, A. (1986). Effects of affective and cognitive focus on the attitude–behavior relation. *Journal of Personality and Social Psychology*, 51, 270–276.
- Millar, M. G., & Tesser, A. (1989). The effects of affective-cognitive consistency and thought on the attitude–behavior relation. *Journal of Experimental Social Psychology*, 25, 189–202.
- Olson, J. M., & Zanna, M. P. (1993). Attitudes and attitude change. *Annual Review of Psychology*, 44, 117–154.
- Petty, R. E., & Krosnick, J. A. (1995). *Attitude strength: Antecedents and consequences*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Petty, R. E., Wegener, D. T., & Fabrigar, L. R. (1997). Attitudes and attitude change. *Annual Review of Psychology*, 48, 609–647.
- Pugh, S. D. (2001). Service with a smile: Emotional contagion in the service encounter. *Academy of Management Journal*, 44, 1018–1027.
- Pytlík Zillig, L. M., Hemenover, S. H., & Dienstbier, R. A. (2002). What do we assess when we assess a Big 5 trait? A content analysis of the affective, behavioral, and cognitive processes represented in Big 5 personality inventories. *Personality and Social Psychology Bulletin*, 28, 847–858.
- Rosenberg, M. J., & Hovland, C. I. (1960). Cognitive, affective, and behavioral components of attitudes. In M. J. Rosenberg, C. I. Hovland, W. J. McGuire, R. P. Abelson, & J. W. Brehm (Eds.), *Attitude organization and change* (pp. 1–14). New Haven, CT: Yale University Press.
- Rotundo, M., & Sackett, P. R. (2002). The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: A policy-capturing approach. *Journal of Applied Psychology*, 87, 66–80.
- Schmidt, F. L., Le, H., & Ilies, R. (2003). Beyond alpha: An empirical examination of the effects that different sources of measurement error have on reliability estimates for measures of individual differences constructs. *Psychological Methods*, 8, 206–224.
- Spector, P. E., & Fox, S. (2002). An emotion-centered model of voluntary work behavior: Some parallels between counterproductive work behavior and organizational citizenship behavior. *Human Resource Management Review*, 12, 269–292.
- Thoresen, C. J., Kaplan, S. A., Barsky, A. P., Warren, C. R., & de Charmont, K. (2003). The affective underpinnings of job perceptions and attitudes: A meta-analytic review and integration. *Psychological Bulletin*, 129, 914–945.
- Watson, D. (2000). *Mood and temperament*. New York: Guilford Press.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063–1070.
- Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology*, 76, 805–819.
- Weiss, H. M. (2001). Introductory comments. *Organizational Behavior and Human Decision Processes*, 86, 1–2.
- Weiss, H. M. (2002). Deconstructing job satisfaction: Separating evaluations, beliefs, and affective experiences. *Human Resource Management Review*, 12, 173–194.

- Weiss, H. M., Nicholas, J. P., & Daus, C. S. (1999). An examination of the joint effects of affective experiences and job beliefs on job satisfaction and variations in affective experiences over time. *Organizational Behavior and Human Decision Processes*, 78, 1–24.
- Wheeler, L., & Reis, H. T. (1991). Self-recording of everyday life events: Origins, types, and uses. *Journal of Personality*, 59, 339–354.
- Wood, P., & Brown, D. (1994). The study of intraindividual differences by means of dynamic factor models: Rationale, implementation, and interpretation. *Psychological Bulletin*, 116, 166–186.

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