WHISTLE WHILE WE WORK?

A META-ANALYTIC COMPARISON OF THE IMPACT OF JOB SATISFACTION, TRAIT AFFECT, AND STATE AFFECT ON PERFORMANCE

by

ASHLEY W. SUTTON

(Under the Direction of Brian J. Hoffman)

ABSTRACT

Despite substantial attention to the interplay between worker affect and performance at work, this literature has not been subject to a comprehensive summary and review. The present study presents a meta-analysis of the effect of multiple conceptualizations of affect on performance. Specifically, a meta-analytic comparison of the relationship between job satisfaction, trait affect, and state affect on performance is provided. Finally, a set multiple regression analyses is used to determine the total proportion of variance that affect explains in performance and the degree to which the various conceptualizations of affect explain unique variance in performance.

INDEX WORDS: Trait Affect, State Affect, Job Satisfaction, Performance, Work Attitudes

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DEDICATION

I dedicate this to my loving parents and wonderful husband.

Thank you for your love and support.

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First and foremost, I would like to acknowledge my wonderful husband, Steve, whose love and support has been invaluable throughout the graduate school process. Second, I would like to acknowledge my parents, for instilling in me the importance of an education. Next, I would like to acknowledge my committee members Brian Hoffman, Charles Lance, and Karl Kuhnert. Thank you for sharing your knowledge and giving your continuous support. Finally, thanks to Ben Overstreet for acting as my second data coder and checking my work.

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CHAPTER 1

INTRODUCTION

. The adage that a happy employee is a productive employee is common in both the organizational vernacular and the extant literature (e.g. Judge, Thoresen, Bono, & Patton, 2001; Wright, Cropanzano, Denney, & Moline, 2002; Cropanzano & Wright, 2001). Early research attempted to examine "happy workers" by investigating their attitudes toward work (e.g., job satisfaction) and the impact of these attitudes on work performance (Hoppock, 1935; Munsterberg, 1913). Over the years, volumes of empirical research have attempted to identify the role that job satisfaction plays in job performance (Brayfield & Crockett, 1955; Harrison, Newman, & Roth, 2006; Herzberg, Mausnes, Peterson, & Capwell, 1957; Judge et al, 2001; Locke, 1970; Schwab & Cummings, 1970; Vroom, 1964). In contrast to the widely held idea that a happy worker is a productive worker, this stream of research has found somewhat weak relationships between job satisfaction and performance (Brayfield & Crockett, 1955; Iaffaldano & Muchinsky, 1985).

The disappointing observed relationship between job satisfaction and worker productivity resulted in a search for alternate conceptualizations of the role that employee affect, both state and trait, plays in performance. Over the last forty years, the behavioral sciences have seen a shift from a focus on cognitive processes to an emphasis on the role of affect in psychological processes and behavior (Barsade, Brief, & Spataro, 2003; Rafaeli & Sutton, 1987, 1989, 1990, 1991; Sutton & Rafaeli, 1988). This *affective revolution* has translated to the organizational sciences as evidenced by the increasing attention on the behavioral consequences of affect at work (Barsade & Gibson, 2007; Brief & Weiss, 2002; Kaplan, Bradley, Luchman, & Haynes, 2009; Thoresen, Kaplan, Barsky, Warren, & deChermont, 2003). With the focus on worker

affect came a shift from job satisfaction based approaches to examining worker affect and finally to alternate conceptualizations of affect, most notably trait and state affect.

Prior research has substantiated the role of more transient, state affect as an antecedent of work outcomes (e.g. Amabile, Barsade, Mueller, & Staw, 2005; Barsade, 2002; Bono & Ilies, 2006; George & Brief, 1996; Totterdell, 1999; Wright, Cropanzano, & Meyer, 2004; Wright & Staw, 1999). Despite the conceptual distinction between job satisfaction, state affect, and trait affect, and the burgeoning literature supporting the role of affect as a predictor of work outcomes, these conceptualizations of affect in the prediction of work performance have rarely been directly compared.

Kaplan and colleagues' (2009) recent meta-analysis of the impact of trait affect provided an important first step in understanding the relationship between affect and performance by showing that trait affect shares a modest relationship with performance. Despite the contributions of this work, Kaplan and colleagues did not consider the role of state affect in their review. The omission of state affect is an important one, given recent suggestions that state affect is the driving force behind the relationship between affect and performance. In addition, Kaplan et al.'s review did not provide a summary of the total proportion of variance that affect the various forms of affect explain in performance. Accordingly, the central purpose of this study is to provide a meta-analysis of (a) the relationship between state affect and performance, (b) the degree to which job satisfaction, trait affect, and state affect explain unique variance in performance, and (c) and the total proportion of variance explained in job performance by these three forms of affect.

CHAPTER 2

LITERATURE REVIEW AND HYPOTHESES

Multiple Conceptualizations of Affect

Preliminary investigations of the role of affect at work came in the form of work attitudes, typically focused on job satisfaction (Kornhauser & Sharp, 1932). Smith, Kendall, and Hulin (1969) define job satisfaction as "the feeling a worker has about his job" (p.100). Over the past century, job satisfaction has ascended in prominence, becoming among the most investigated variables in the organizational sciences (Staw, 1984). Despite the prevalence of job satisfaction in organizational sciences, prior research has indicated somewhat equivocal findings with respect to the impact of job satisfaction on behavioral outcomes (Hoffman, Blair, Meriac, & Woehr, 2007; Iaffaldano & Muchinsky, 1985; Petty, Mc-Gee, & Cavender, 1984), with job satisfaction typically explaining between 1-2 % of the variance in performance. One frequent explanation for these results is that job satisfaction measures do not adequately capture respondent affect; rather, they reflect cognitive attitudes (e.g. Andrews & Withey, 1976; Campbell, 1976; McKennell, 1978; Organ & Near, 1985). The dissatisfaction with existing operationalizations of satisfaction, in concert with the disappointing empirical findings paved the way for the emergence of more direct measures of affect.

Affect is a phenomenological state of feeling (Watson, 2000) or a "first-person point of view." Prior research consistently supports a multidimensional conceptualization of affect including: positive affect and negative affect (Crawford & Henry, 2004; Diener & Emmons, 1985; Russell, 1980; Watson, Clark, & Tellegen, 1988; Watson & Tellegen, 1985). High levels of positive affectivity are associated with positive states such as *enthusiasm, interest, inspiration,* and *strength,* whereas lower levels of positive affect are associated with feelings of *sadness* and

lethargy (Watson, Clark, & Tellegen, 1998). In contrast, higher levels of negative affectivity are associated with *anger, contempt, disgust, guilt, fear,* and *nervousness,* whereas lower levels of negative affect are more closely associated with feelings of *calmness* and *serenity*. Consistent with this conceptual distinction, prior research has shown that people can simultaneously be characterized by both positive and negative affect (Watson & Tellegen, 1985; George, 1992). Further, although the relationship between positive and negative affect is positive, the magnitude is quite weak (e.g. Bowling, Hendricks, & Wagner, 2008; Fisher, 2000; Larsen, McGraw, & Cacioppo, 2001; Wright & Cropanzano, 1998), and each has a distinct nomological network (e.g., Watson & Pennebaker, 1989), providing empirical support for their distinction.

With roots in the situational perspective to behavior, state affect refers to a pervasive, generalized affective state (George & Brief, 1992) that summarizes how a person feels at a particular time. Affective states are not typically related to a particular circumstance, event, or relationship but pervade particular experiences (Brady, 1970; Morris & Riley, 1987). Thus, a key conceptual distinction between job satisfaction and state affect is that state affect is proposed to capture how people feel while at work, whereas job satisfaction captures how they feel about work (George & Jones, 1996). An event may initially activate a particular mood, but once established the mood endures until another is activated (George & Jones, 1997). Similarly, people can experience various emotional states with varying degrees of intensity during a single day but do not do so simultaneously (Diener & Iran-Nejad, 1986; Watson, 2000).

With the increasing attention to affect as a focal construct came evidence that affect may not be an attitude or state but rather a relatively stable trait. Specifically, evidence emerged revealing that affect appears to be relatively stable over time (Watson & Walker, 1996), consistent across different situations (Watson & Clark, 1984), and a function of genetic

disposition (Tellegen, Lykken, Bouchard, Wilcox, Segal, & Rich, 1988). This indicates that affect may not be a function of the environment, but instead a reflection of individual disposition. Toward this end, organizational research indicates that the stability of affect is sufficiently strong and that levels of affect measured in adolescence predict levels of job satisfaction in later life (Staw, Bell, & Clausen, 1986). Taken together, this stream of research underscores the dispositional underpinnings of affect.

Three Forms of Affect and Work Performance

A critical assumption underlying the investigation of the various forms of affect is that employee affect has a meaningful impact on performance. In addition, the value of the various forms of affect is dependent on the idea that each contributes to the prediction of work performance. Accordingly, the first purpose of this study is to directly compare the impact of state affect, trait affect, and job satisfaction on performance. Before outlining proposed relationships between the various forms of affect and performance, it is first necessary to define the relevant criterion domain of work performance.

Past research has consistently substantiated a distinction between two primary performance constructs: task performance and organizational citizenship behaviors (Hoffman et al., 2007; Organ, 1988). The first factor, task performance, refers to the parts of a person's job that are formally prescribed and contribute to the execution and maintenance of organizational technical processes (Borman & Motowidlo, 1997). Alternately, organizational citizenship behavior (OCB) refers to behaviors that are not necessarily role-prescribed but that facilitate effective organizational functioning (Katz & Kahn, 1978; Organ, 1988; Smith, Organ, & Near, 1983). Although OCB is referred to using a variety of terms, relevant behaviors include persisting with enthusiasm and extra effort to successfully complete one's task, cooperating with

and helping others, following organization rules and procedures, and endorsing, supporting, and defending organizational objectives (Borman & Motowidlo, 1993; Hanson & Borman, 2006).

Satisfaction and performance. The relationship between job satisfaction and performance is one of the most studied in management research (Judge et al, 2001) with some of the earliest investigations dating to the early 20th century (Munsterberg, 1913). Over the years, some have supported the relationship between satisfaction and performance (e.g. Motowidlo, 1982; Nathanson & Becker, 1977; Organ & Lingl, 1995; Spencer & Steers, 1981; Steers, 1975; Strauss, 1966); whereas, others have not (e.g. Mossin, 1949; Moorman, Niehoff, & Organ, 1993; Orpen, 1974; Orpen 1978; Penley & Hawkins, 1980; Schappe, 1998; Schriesheim & Murphy, 1976; Szilagyi, 1980). In an attempt to organize and abridge the voluminous literature, several qualitative (Brayfield & Crokett, 1955; Herzberg, Mausnes, Peterson, & Capwell, 1957; Locke, 1970; Vroom, 1964) and quantitative (Abramis, 1994; Iaffaldano & Muchinsky, 1985; Hoffman et al., 2007; Judge et al, 2001; Organ & Ryan, 1995; Petty et al, 1984) reviews have summarized the research investigating job satisfaction and performance. Existing quantitative reviews indicate a mean uncorrected sample weighted correlation between satisfaction and performance ranging from .15 (Iaffaldano & Muchinsky, 1985) to .23 (Petty et al, 1984) and satisfaction and OCB of .24 (Organ & Near, 1995) to .28 (Podsakoff, MacKenzie, Paine, & Bachrach, 2000) supporting a link, albeit weak, between job satisfaction and task performance and OCB.

Affect and performance. To understand the differing effects of positive and negative affect on performance the mechanisms underlying each type of affect should first be examined. Watson, Wiese, Vaidya, and Tellegen (1999) suggested that positive affect and negative affect are components of two basic biobehavioral systems. From this perspective, positive affect is a materialization of the "approach system" (Carver & White, 1994); whereas, negative affect is

part of behavioral inhibition system which promotes “avoidance” (Gray, 1970). In other words, it is the differential response to positive and negative experiences associated with varying levels of affect is thought to be a primary mechanism accounting for the impact of affect on performance (Watson et al, 1999).

To illustrate the behavioral and motivational mechanisms, those experiencing positive affect perceive stimuli and situations more positively while those high in negative affect experience stimuli and situation more negatively (e.g. Bower, 1981; Carson & Adams, 1980; Clark & Teasdale, 1985; Forgas, Bower, & Krantz, 1984). Those high in positive affect tend to be more attracted to interaction with others (e.g. Bell, 1978; Mehrabian & Russell, 1975), have greater self efficacy (Forgas, Bower, & Moylan, 1990), more optimistic views about future events (Forgas & George, 2001; Wright & Bower, 1992), and an enhanced social outlook (Carlson, Charlin, & Miller, 1988). Therefore, those with positive trait affect are likely to look favorably to their work and dealings with others while those with negative affect tend to look more negatively towards their work experience. Additionally, people with positive and negative trait affect also have differing levels of motivation. Those high in positive affect are more likely to set difficult goals (Wright & Staw, 1999), persist on tasks (George & Brief, 1996), see failure as a temporary setback (Forgas, 1992), and are likely to persevere following negative feedback (Burke, Brief, & George, 1993). High positive affect individuals are more successful in the workplace by means of their level of motivation, while negative affect individuals experience less success.

The opposite of positive affect can be said about negative affect through motivational theory. Those high on trait negative affect encounter more stressors at work (Spector & Jex, 1998), and will be less likely to acquire resources needed to facilitate effective task performance

(Zellars & Perrewe, 2001). In addition, interpersonal conflict, higher workload (Spector & Jex, 1998), and higher self doubt (Watson & Pennebaker, 1989) have all been associated with negative affect. From this, those who are high in trait negative affectivity will face numerous obstacles to successful performance, and will likely have lower levels of performance ratings.

State vs. trait affect. Although both state and trait affect are hypothesized to be related to levels of performance, it is probable that state affect will result in a stronger relationship. In line with the state affect or mood perspective, prior research has proposed that temporary moods states may be more important than stable traits in predicting work outcomes (Brief, 1998; George, 1991). This is in large part due to the influence of the situation (George, 1989, 1991). The role of the situation will likely influence their level of state affect so that those high on positive trait affect may not experience high levels of positive state affect and those high on negative trait affect may not experience high levels negative state affect while at work.

State affect and performance. Consistent with theoretical explanations, several primary studies have focused on the beneficial relationship between state affect and performance (e.g. Barsade, 2002; Bono & Ilies, 2006; George, 1991; Staw, Sutton, & Pelled, 1994) with effects ranging from r = -.13 (Wright & Staw, 1999) to r = .81 (Totterdell, 1999) for positive state affect, and the effects of negative state affect on performance ranging from r = -.11 (Wright & Staw, 1999) to r = -.31 (Wright, Cropanzano, & Meyer, 2004). Research investigating positive affect and OCB (George, 1991; Barsade, 2002; Wright & Staw, 1999; Wright et al, 2004) find a relationship between the two constructs ranging from r = .14 (Wright & Sablynski, 2008) to r = .39 (Barsade, 2002)[1]. Given the theoretical rationale for the relationship state affect and performance and the range of results observed in primary, a meta-analysis of this literature is needed to paint a clearer picture of the relationship between state affect and performance.

Hypothesis 1: Positive state affect will be positively related to job performance.

Hypothesis 2: Negative state affect will be negatively related to job performance.

Hypothesis 3: Positive state affect will be positively related to organizational citizenship behavior.

Trait affect and performance. Prior research has also supported a relationship between performance and positive trait affect (George, 1991; Fisher, 2003) and negative trait affect (Fortunato, 2004; VanYperen, 2003). Kaplan et al. (2009) found that performance was modestly related to performance and positive trait affect and between negative trait affect and performance (mean sample weighted correlation = .19 and -.15, respectively).

Hypothesis 4: Positive trait affect will be positively related to job performance.

Hypothesis 5: Negative trait affect will be negatively related to job performance.

Previous research has also shown the beneficial effects of positive trait affect on OCB (Johnson, 2008; Lee & Allen, 2002) and negative trait affect on OCB (Johnson, 2008; Jones & Schaubroeck, 2004). Effects for positive affect range from r = -.02 (Jones & Schaubroeck, 2004) to r = .47 (Johnson, 2008), while effects for trait negative affect range from r = -.02 (Lee & Allen, 2002) to r = -.33 (Johnson, 2008).

Hypothesis 6: Positive trait affect will be positively related to OCB.

Hypothesis 7: Negative trait affect will be negatively related to OCB.

Unique Contribution of Three Forms of Affect

Although prior research substantiates the effect of job satisfaction (e.g. Abramis, 1994; Iaffaldano & Muchinsky, 1985; Judge et al, 2001; Organ & Ryan, 1995; Petty & McGee, 1984), state affect (e.g. Barsade, 2002; Bono & Ilies, 2006; Bower, 1981; Brief, 1998; Carson & Adams, 1980; Clark & Teasdale, 1985; George, 1991; George, 1998; Forgas Bower, & Krantz,

1984; Monk, 1990; Staw, Sutton, & Pelled, 1994; Watson, 2004; Wright et al, 2004; Wright & Staw, 1999), and dispositional affect (e.g. Cropanzano et al, 1993; Fisher, 2003; Fortunato & Williams, 2002; Fortunato, 2004; Kaplan et al, 2009; Staw & Barsade, 1993; Wright & Staw, 1999) on worker productivity, existing empirical work has rarely simultaneously considered the relationship between these three constructs on work performance. The extent to which each explains variance in work performance beyond the other forms is a crucial to facilitate inferences with respect to the incremental value of the ostensibly distinct aspects of affect. Thus, the primary purpose of this study is the first meta-analytic review of the incremental value of job satisfaction, trait affect, and state affect in the prediction of performance.

Employee affect, typified by job satisfaction, was traditionally viewed as a function of the characteristics of the organization and the way that the work context meets the needs of employees (cf. Landy, 1978; Mitchell, 1974). This perspective is typified by Hackman and Oldham's (1975) popular job characteristics model that hypothesizes that organizations can enhance worker satisfaction by enriching jobs. Despite the intuitive appeal of this perspective, evidence has begun to accumulate suggesting that attitudes such as job satisfaction may be less a function of environmental characteristics and more a function of employee disposition (Staw et al, 1986). From this perspective, "affect may influence individuals' responses to jobs, regardless of at least some dimensions of task context" (Staw et al, 1986, p. 71). However, a central question in evaluating the value of job satisfaction and dispositional affect is the degree to which job satisfaction, which presumably reflects objective job characteristics and employee affective disposition explains variance in performance beyond dispositional affect. If the observed relationship between job satisfaction and performance is completely accounted for by dispositional affect, efforts to enrich jobs or enhance organizational climate may not be

particularly useful to organizations. On the other hand, past research has found that "objective" job characteristics are indeed related to job satisfaction and to a lesser extent, performance (Baltes, Briggs, & Huff, 1999). Thus, the relationship between satisfaction and performance is not fully accounted for by an individual's disposition, and accordingly, job satisfaction is expected to explain variance in performance beyond dispositional affect.

Hypothesis 8: Satisfaction will explain variance in task performance and OCB above trait affectivity.

Despite prior research's emphasis on trait affect and job satisfaction as conceptualizations of affect, state affect has also emerged as a distinct form of affect, with linkages to the performance domain. Studies have shown that the unique influence of state affect is conceptually distinct from both job satisfaction and trait affect (e.g., Judge & Ilies, 2004; Rhoades, Arnold, & Jay, 2001; Weiss, Nicholas, & Daus, 1999), but the degree to which state affect uniquely contributes to the explanation of performance-relevant variance is a key unanswered question in this literature.

According to George (1989), it is the affective state and not the more general trait that affects performance. Prior research supports this proposition. For instance, George (1991) showed that trait affect was significantly related to state affect and that state affect was significantly associated with work outcomes, but that trait affect was not significantly related to those same outcomes when accounting for state affect. Additionally, Tsai, Chen, and Liu (2007) found that state affect uniquely predicts employee performance beyond trait affect. Collectively, these findings suggest that individuals may not experience a level of state affect consistent with their trait affect. Meaning that those high on dispositional positive affect may not experience positive affective states at work, and conversely those low on positive affect may experience

positive state affect at work. This occurs because the trait influences the state and behaviors fostered by the state may be unrelated to the overall trait. This is due to the influence of various situational factors and the interaction between the person and the situation (George, 1991). Consistent with this explanation, it has been found that state affect explains variance in performance beyond measures of trait affect (George, 1989, 1991; Tsai et al, 2007; Watson et al, 1998) and once state affect is accounted for trait affect has little to no influence on performance (George, 1989, 1991).

Although the conceptual and empirical distinctness of trait and state affect is relatively well established, the distinctness between job satisfaction and state affect has been the subject of less empirical research. One proposed distinction is the actual content of the measures. Conceptually, an affective construct, in reality, job satisfaction research has been criticized for relying on cognitively oriented measures (e.g. Brief, 1998; Brief & Roberson, 1989; Campbell, 1976; Andrews & Withey, 1976; McKennell, 1978), and it is only in recent years that a hand full of satisfaction measures have begun to include affect (Brief & Weiss, 2002; Judge & Larsen, 2001). In fact, the preponderance of items on job satisfaction scales focus on facets of the job itself and ask little about feelings concerning the job (Organ & Near, 1985). Further, the wording and design of the items typically require an evaluation of the work domain (Organ & Near, 1985), an intrinsically cognitive process. Moreover, it has been speculated that a person can report being satisfied but not report being in a positive state affect (Organ & Near, 1985). Previous research has examined the effects of both state affect and job satisfaction on performance (Fisher, 2003; Fortunato & Williams, 2002) but has not examined the incremental effects of each on performance. Given evidence that job satisfaction measures assess cognitive

evaluations to a greater extent than affective feelings, it is expected that state affect will also explain variance in performance beyond job satisfaction.

. *Hypothesis 9: State affect will explain variance in performance and OCBs above trait affectivity and job satisfaction.*

CHAPTER 3

METHOD

Literature Search

To locate articles to be included in the meta-analysis, an electronic search was conducted of electronic databases including PsycINFO and Web of Science with the search terms "dispositional affect" and "state affect" in combination with performance, job performance, work performance, organizational citizenship behaviors, extra-role behaviors, and pro-social behaviors. In addition, reference sections of key review articles (e.g., Barsade & Gibson, 2007; Kaplan et al, 2009), were examined to identify studies not located during the computerized search. Unpublished data, such as dissertations and conference papers, were also included. To be included in the meta-analysis, a study must have reported: (a) the correlation (or some statistic that can be converted to a correlation) between job satisfaction, trait affect, or state affect and performance or organizational citizenship behavior and (b) the sample size.

Coding of Studies

Data points were coded based on the form of affect (*job satisfaction, positive trait affect, and state affect*) and the performance construct (*performance* and *OCB*). Global and facet level measures of satisfaction were coded into a single job satisfaction category. Measures that asked how a person felt in general or overall were coded as trait affect (e.g. Positive and Negative Affect Schedule, Strain Free Negative Affectivity, Strain Free Positive Affectivity). Measures included as state affect asked respondents to rate their feelings over a short time span. For example, measures which asked respondents how they felt in the last week or how they currently felt were coded as state affect. In longitudinal studies where state affect was measured at multiple intervals, each interval was included in order to determine the degree to which state

affect more strongly predicted future performance or present performance. Additionally, the correlations between the three forms of affect were coded in order to determine their overlap and also to facilitate the subsequent regression analyses. Objective performance and ratings (including self, supervisor, subordinate, and peer ratings) were coded as a single performance category. Measures of organizational citizenship behavior included: organizational citizenship behavior, altruism, contextual behavior, prosocial behaviors, and organizational spontaneity. Based on past evidence that OCB is best represented with a general factor, when multi-dimensional measures of OCB were included in a single study, each was averaged included to form a single data point (Hoffman et al., 2007).

Several additional variables were coded for potential moderator analysis, including: the rater of performance (self, other rater: supervisor, peer, subordinate), job complexity (rated from the Job Zone rating on O*Net; students; low = Zone 1 and 2, individuals who have a high school diploma or less; medium = Zone 3 and 4, individuals who have a bachelor's degree or less; high = Zone 5 and 6, individuals with more than a bachelor's degree; National Center for O*NET Development), organizational setting (lab study vs. field study), percentage of males, and the average age of participants. Also, when a study reported the correlation between state affect and performance, the time lag of the two constructs of interest was recorded in order to determine the effect of state affect on subsequent performance. As stated previously, it is important to consider whether state affect only correlates with performance when state affect and performance are measured at the same time, or whether state affect remains a predictor of performance when performance is measured after the state. In other words, is state affect only an important predictor of performance when state affect and performance are measured at the same time, or does state affect have a relationship with future performance? Thus, all studies investigating the

relationship between state affect and performance were coded as: (a) state affect and performance measured simultaneously, or (b) state affect measured at time one and performance measured at a different time. All data points were coded by two trained coders.

Data Analysis

To maintain the independence of the data, samples containing more than one correlation were averaged. For example, if a sample included the relationship between positive affect and more than one dimension of OCB (e.g., altruism and courtesy), the two instances were combined to create a single effect size prior to analyses. Methods developed by of Raju, Burke, Normand, and Langlois (1991) were used to conduct the meta-analyses. Each individual correlation was weighted by the sample size and corrected for attenuation due to unreliability in both the predictor and the criterion. When predictor or criterion reliabilities were not reported, an artifact distribution was constructed using the average reliability from those reporting reliability. Corrected correlations were converted to Fisher's *z* prior to averaging the individual effects. Once averaged, the mean sample-weighted, corrected effect was transformed back to Pearson's *r.* This process is important because Fisher's *z* allows for the averaging of values which the distribution of *r*'s does not. Additionally, it corrects a small underestimation in rho (Schmidt & Hunter, 2004). 80% credibility intervals around the estimated mean population correlations were also generated. When interpreting the 80% credibility interval, 90% of the estimated true validities are above the lower bound 80% credibility value and a large credibility interval and/or a credibility interval that includes zero suggest the presence of moderators. Analyses were conducted using meta-analysis code developed for SAS (Arthur, Bennett, & Huffcutt, 2001; Bynum, unpublished statistical program).

To examine hypotheses eight, nine, and ten, a meta-analytic correlation matrix was constructed between each form of affect and the two performance outcomes. The meta-analytic correlation matrix was subsequently entered into SPSS for regression analyses using harmonic mean of the sample sizes of the relationships in the correlation matrix (Viswesvaran & Ones, 1995). To examine the incremental validity of state affect beyond satisfaction and trait affect (Hypothesis 10), a three step process was completed. First, performance was regressed on positive and negative trait affect. Next, to determine the degree to which job satisfaction explained variance in performance beyond trait affect, job satisfaction was added to the model (Hypothesis 8). Finally, to determine degree to which state affect explained variance in performance beyond trait affect and job satisfaction (Hypothesis 9), state positive affect and negative affect were added to the model.

CHAPTER 4

RESULTS

Table 4.1 presents the results of the meta-analyses of affect and performance outcomes. Hypotheses 1 and 2 predicted that state affect would be related to job performance. The results support these predictions as both positive and negative state affect were related to job performance in the predicted directions (ρ = .27, and -.18, respectively). Hypothesis 3 proposed a positive relationship between positive state affect and OCB. Results showed that positive state affect was positively related to OCB (ρ = .30) supporting Hypothesis 3. Unfortunately, past research has not investigated the overlap between negative state affect and OCB, negating the possibility of summarizing this relationship.

Despite evidence for consistent, non-zero relationships between trait and state affect and criterion variables, the associated credibility intervals were quite large, suggesting potential substantive moderators. In order to increase the number of studies for the moderator analyses, task performance and OCB were combined into a single performance category for each form of affect. Although not ideal, this step was necessary to ensure adequate data to interpret results and is consistent with standard practice when investigating moderation in meta-analysis (e.g., Barrick & Mount, 1991; Judge & Piccolo, 2004). The source of rating, complexity of the job, and setting of the study were examined for potential moderating effects. Table 4.2 shows that the relationship between state affect and performance was equivalent for self (ρ = .29) and others' ratings of performance (ρ = .29). Similarly, the relationship between positive state affect and performance did not differ between either student/ low complexity and moderate/high complexity jobs (ρ = .29 and .31 respectively; Table 4.3) or between lab and field studies (ρ = .29 and.30, respectively; Table 4.4).

Consistent with Hypotheses 4 and 6, positive trait affect was positively related to both job performance and OCB (ρ = .17 and .26, respectively). However, although in the predicted direction, negative trait affect was weakly related to performance and OCB (ρ = -.11 and .07, respectively). Thus, Hypotheses 5 and 7 were not supported. Although these results support the relationship between positive trait affect and job performance and OCB, these relationships were typically weak in an absolute sense and were weaker than the relationships between state affect and performance. In addition, the magnitude of the credibility intervals suggests substantive moderators of these relationships.

As with state affect, job performance and OCB were combined for moderator analyses. Consistent with the positive state affect findings, positive trait affect was slightly more strongly related to self ratings of performance, relative to others' ratings of performance (ρ = .23 and .16, respectively). Conversely, negative trait affect evidenced a similar relationship between others' ratings (ρ = -.09) and self ratings (ρ = -.08). Next, for both positive and negative trait affect, as complexity increases, so does the magnitude of the relationship between trait affect and performance. Specifically, both positive and negative trait affect were less strongly related to performance in low (ρ = .10 and -.01, respectively), relative to high complexity settings (ρ = .32 and -.08, respectively). Finally, for both positive (ρ = .21 and .11, respectively) and negative affect (ρ = -.09 and -.01, respectively), trait affect was more strongly related to performance in field, relative to lab settings.

I next investigated whether the relationship between state affect and performance was contingent upon state affect and performance measures being completed at the same time. Results from this set of analyses (Table 4.5) indicate that although state affect is consistently more strongly related to performance outcomes when the measures are taken simultaneously,

state affect remains a weak-moderate correlate of performance and OCB when the constructs are measured separately.

Next, the study examined the incremental effects of each type of affect on job performance and OCB (Hypotheses 8 and 9). In order to investigate unique effects of different forms of affect, a meta-analytic correlation matrix was constructed using the corrected population correlations for use in subsequent regression analyses. A note should be made in regards to the effects of state affect on performance and OCB. The correlations between state affect and performance at subsequent times were used in order to assess the lingering effects of state affect. Because these particular relationships were used, the *k's* and resulting *r's* differ from those found in the preliminary analyses, because it was no longer necessary to average performance measured at two different times. To determine the relative contribution of the three forms of affect on performance, job performance was regressed on the three affect variables, with the two trait affect variables entered first, followed by job satisfaction in the second step and the two forms of state affect in the final step. This general procedure was also completed using OCB as criterion variable. It was hypothesized that job satisfaction would account for variance above trait affect in both job performance and OCB. Results supported this hypothesis for OCB (Table 8; $\Delta R^2 = .06$, $F = 43.58$, $df = 1, 494$), but not for job performance (Table 4.7; $\Delta R^2 = .01$, $F = 6.18$, $df = 1, 494$). Next, it was hypothesized (Hypothesis 9) that state affect would account for variance beyond both trait affect and job satisfaction in job performance and OCB. Although, state affect explained variance in job performance beyond both trait affect and satisfaction (Table 4.7; $\Delta R^2 = .06$, $F = 19.95$, $df = 2, 492$), state affect did not explain unique variance in OCB (Table 4.8; $\Delta R^2 = .001$, $F = .73$, $df = 1, 493$), lending partial support to

hypothesis 9.). Together, the three forms of affect explained 6.5% of the variance in performance and 10% of the variance in OCB.

Table 4.1

Relationships with Performance Outcomes.

Variable	K	N	Rxy	ρ	Var Rho	80% CV Lower	80% CV Upper	Q
Positive State Affect								
- Job Performance	11	1105	.23	.27	.03	.07	.47	46.11
- OCB	5	692	.26	.30	.01	.19	.41	13.14
Negative State Affect								
- Job Performance	5	944	-.16	-.18	.00	-.18	-.18	5.06
Positive Trait Affect								
- Job Performance	18	2974	.14	.17	.01	.03	.30	59.28
- OCB	10	1324	.22	.26	.03	.05	.47	57.02
Negative Trait Affect								
- Job Performance	8	741	-.09	-.11	.00	-.21	-.02	15.18
- OCB	10	1679	-.06	-.07	.00	-.07	-.07	10.35

Note. K = Number of independent samples. N = Total sample size. Rxy = Uncorrected mean population correlation.. ρ = Fully corrected relationship. Var Rho = Variance in effect size. CV = Credibility interval. OCB = Organizational Citizenship Behavior. Q = Test for homogeneity.

Table 4.2

Meta-Analytic Correlations with Source of Performance Ratings as Moderator.

Variable	K	N	Rxy	ρ	Var Rho	80% CV Lower	80% CV Upper	Q
Positive State Affect								
- Self	5	510	.28	.36	.02	.17	.54	18.64
- Other	9	1224	.25	.28	.03	.08	.49	49.49
Positive Trait Affect								
- Self	6	1510	.19	.23	.03	.02	.44	52.87
- Other	22	2788	.15	.18	.01	.04	.32	69.05
Negative Trait Affect								
- Self	4	494	-.07	-.08	.00	-.08	-.08	6.30
- Other	13	1791	-.08	-.10	.00	-.09	-.09	19.25

Note. K = Number of independent samples. N = Total sample size. Rxy = Uncorrected mean population correlation.. ρ = Fully corrected relationship. Var Rho = Variance in effect size. CV = Credibility interval. OCB = Organizational Citizenship Behavior. Q = Test for homogeneity.

Table 4.3

Meta-Analytic Correlations with Complexity of Job as Moderator.

Variable	K	N	Rxy	ρ	Var Rho	80% CV Lower	80% CV Upper	Q
Positive State Affect								
- Students/Low	11	1198	.25	.29	.04	.11	.46	40.69
- Medium/High	3	282	.26	.31	.02	.06	.56	38.06
Positive Trait Affect								
- Student/Low	7	2208	.09	.10	.00	.10	.10	6.02
- Medium/High	13	1307	.26	.32	.01	.18	.46	40.84
Negative Trait Affect								
- Students/Low	1	135	-.01	-.01	.00	-.01	-.01	1.04
- Medium/High	11	1781	-.07	-.08	.00	-.14	-.02	21.92

Note. K = Number of independent samples. N = Total sample size. Rxy = Uncorrected mean population correlation.. ρ = Fully corrected relationship. Var Rho = Variance in effect size. CV = Credibility interval. OCB = Organizational Citizenship Behavior. Q = Test for homogeneity.

Table 4.4

Meta-Analytic Correlations with Setting of Study as Moderator.

Variable	K	N	Rxy	ρ	Var Rho	80% CV Lower	% CV Upper	Q
Positive State Affect								
- Lab	6	554	.25	.29	.04	.03	.55	35.95
- Field	11	1307	.25	.30	.02	.14	.46	38.06
Positive Trait Affect								
- Lab	3	348	.09	.11	.00	.11	.11	3.33
- Field	25	3950	.17	.21	.02	.03	.39	118.58
Negative Trait Affect								
- Lab	1	135	-.01	-.01	.00	-.01	-.01	0.00
- Field	18	2594	-.08	-.09	.00	-.09	-.09	25.99

Note. K = Number of independent samples. N = Total sample size. Rxy = Uncorrected mean population correlation.. ρ = Fully corrected relationship. Var Rho = Variance in effect size. CV = Credibility interval. OCB = Organizational Citizenship Behavior. Q = Test for homogeneity.

Table 4.5

Meta-Analytic Correlations with Longitudinal Effects of State Affect as Moderator.

Variable	K	N	Rxy	ρ	Var Rho	80% CV Lower	% CV Upper	Q
Positive State Affect								
- Same Time	21	1826	.20	.24	.05	.00	.50	112.29
- Different Time	9	796	.12	.15	.01	.02	.28	22.60
Negative State Affect								
- Same Time	8	561	-.27	-.32	.00	-.32	-.32	9.45
- Different Time	4	312	-.17	-.20	.00	-.20	-.20	2.79

Note. K = Number of independent samples. N = Total sample size. Rxy = Uncorrected mean population correlation.. ρ = Fully corrected relationship. Var Rho = Variance in effect size. CV = Credibility interval. OCB = Organizational Citizenship Behavior. Q = Test for homogeneity.

Table 4.6

Relationships of Variables of Interest.

	Positive Trait Affect	Negative Trait Affect	Positive State Affect	Negative State Affect	Job Satisfaction	Job Performance	Organizational Citizenship Behavior
Positive Trait Affect	_____						
Negative Trait Affect	-.15 (1157)	_____					
Positive State Affect	.49 (567)	-.44 (310)	_____				
Negative State Affect	-.52 (277)	.45 (78)	-.20 (248)	_____			
Satisfaction	.48 (2283)	-.40 (2387)	.54 (1335)	-.33 (2470)	_____		
Job Performance	.17 (2974)	-.11 (741)	.19 (770)	-.20 (312)	.17[a] (12,192)	_____	
Organizational Citizenship Behavior	.26 (1324)	-.08 (1988)	.20 (546)	_____	.28[b] (6,746)	.41 (427)	_____

Note. Values in parenthesis are the total sample size. [a] From Judge, Thoresen, Bono, & Patton (2001). [b] From Organ & Ryan (1995).

Table 4.7

Job Performance Regressed onto Trait Affect, Job Satisfaction, and State Affect.

		Beta	t	Sig.	R	R^2	F	df	ΔR^2	F	df
Model 1	Constant		.00	1.00	.19	.036	9.23	2, 495			
	Positive Trait Affect	.16	3.52	.00							
	Negative Trait Affect	-.09	-1.94	.05							
Model 2	Constant		.00	1.00	.20	.042	7.16	3, 494	.01	6.18	1,494
	Positive Trait Affect	.12	2.35	.02							
	Negative Trait Affect	-.06	-1.16	.25							
	Job Satisfaction	.09	1.67	.09							
Model 3	Constant		.00	1.00	.26	.067	7.11	5, 492	.06	19.95	2, 492
	Positive Trait Affect	-.03	-.45	.65							
	Negative Trait Affect	.07	1.17	.23							
	Job Satisfaction	.06	1.05	.29							
	Positive State Affect	.16	2.70	.00							
	Negative State Affect	-.19	-3.23	.00							

Table 4.8

Organizational Citizenship Behavior Regressed onto Trait Affect, Job Satisfaction, and State Affect.

		Beta	t	Sig.	R	R^2	F	df	ΔR^2	F	Δdf
Model 1	Constant		.00	1.00	.26	.069	18.43	2, 495			
	Positive Trait Affect	.25	5.79	.00							
	Negative Trait Affect	-.04	-.96	.34							
Model 2	Constant		.00	1.00	.32	.099	18.23	3, 494	.06	43.58	1,494
	Positive Trait Affect	.16	3.32	.00							
	Negative Trait Affect	.03	.64	.52							
	Job Satisfaction	.21	4.08	.00							
Model 3	Constant		.00	1.00	.32	.100	13.537	4, 493	.001	.73	1,493
	Positive Trait Affect	.15	2.92	.00							
	Negative Trait Affect	.04	.79	.43							
	Job Satisfaction	.21	3.75	.00							
	Positive State Affect	.03	.56	.57							

CHAPTER 5

DISCUSSION

This study makes several contributions to the literature. First, it provides the first summary of the relationship between state affect and performance constructs. In addition, it establishes preliminary evidence for key moderators of the relationship between state and trait affect and performance, including: job complexity, source of the performance rating, and time lag in the collection of measures. Next, the results contribute to the literature by providing, meta-analytic support for the unique contribution of state affect beyond trait affect and satisfaction in the prediction of job performance. Finally, it provides the most comprehensive estimate to date of the total proportion of variance that affect explains in performance and in doing so, underscore the centrality of affect to effective work performance.

Consistent with the work of Kaplan and colleagues (2009), positive trait affect is a modest correlate of job performance and OCB and negative trait affect is consistently, albeit weakly related with job performance and OCB.

The current results, in combination with the findings of Kaplan et al (2009), provide strong support for the role of affectivity, both state and trait, in performance. Consistent with previous research, those individuals with a positive outlook or those who are typically in a better mood also tend to perform at a higher level (Barsade, 2002; Bono & Ilies, 2006; Fisher, 2003; George, 1991; Staw, Sutton, & Pelled, 1994) and engage in higher levels of OCB (Barsade, 2002; George, 1991; Johnson, 2008; Lee & Allen, 2002; Wright & Staw, 1999; Wright et al, 2004), while a negative state or trait has deleterious effects on performance and OCB. While both positive and negative affect are important to performance and OCB, their predictive power differs across outcomes.

Although it is important to replicate the results of prior research, the primary contribution of this study was the summary of the relationship state affect and performance. The results revealed that positive state affect was moderately related to both job performance and OCB and negative state affect was positively related to job performance.

Consistent with ideas sent forth by George (1989, 1991), findings in regards to both state and trait affect are particularly important because they illustrate that positive affective states are indeed important, when examining performance. For instance, both positive and negative state affect were more strongly related to performance than trait affect. In contrast to this general trend, positive trait and state affect did not differ and displayed similar relationships with OCBs. These findings indicate that state affect is important when considering performance.

Incremental Effects of Affect

The next primary purpose of this study was to examine the incremental effects of the multiple conceptualizations of affect on job performance. Specifically, although prior reviews have substantiated the main effect of both trait affect and job satisfaction on performance, research has not simultaneously considered the effects of trait affect, job satisfaction and state affect on performance. Our results, consistent with those of Kaplan and colleagues (2009), reveal that when variance due to job satisfaction is controlled, positive trait affect remains a significant predictor while negative trait affect is no longer a significant predictor of performance. Additionally, consistent with Staw and colleagues (1994), job satisfaction was not significantly related to job performance after controlling for positive and negative trait affect. These findings indicate that the covariance between job satisfaction and job performance is as much a function of an individual's dispositional tendency as it is an employee's satisfaction with their specific work context.

The primary contribution of this study was the addition of state affect to job satisfaction and trait affect in understanding the role of affect in work performance. Results indicate that state affect explains variance in job performance beyond trait affect and job satisfaction. These results support previous studies (George, 1989, 1991; Tsai et al, 2007; Watson et al, 1998) which indicate that state affect appears accounts for unique information in job performance.

This indicates that state affect is empirically different and provides unique information about performance outcomes and is not simply equivalent to trait affect. This occurs because states are more transient and are determined by personality and situational factors. Ultimately it is the influence of the situation or environment that fosters the state (George, 1991). A person that is high in positive trait affect will not always experience positive states in all contexts (e.g. work, relationships), just as a person who is low in positive trait affect will not consistently experience few positive states (George & Brief, 1992). The state truly is the precursor to performance and initiates the behavior.

In addition to the effects beyond trait affect, state affect also has influence beyond job satisfaction. This effect can be explained for a variety of reasons. One such reason is the content of the state affect and satisfaction measures. Because job satisfaction measures are generally cognitive in nature (e.g. Brief, 1998; Brief & Roberson, 1989; Campbell, 1976; Andrews & Withey, 1976; McKennell, 1978) they lack items which include items that directly assess affect which are designed to allow for employees to cognitively evaluate and not affectively evaluate their work (Organ & Near, 1985). From this, many affective evaluations can be missed when only assessing job satisfaction. Finally, in addition to the wording and content of the measures, a person can simultaneously report levels of job satisfaction and state affect that do not match (Organ & Near, 1985).

Contrary to what was expected job satisfaction did not account for variance in performance above trait affect; further, state affect did not account for variance beyond the other affect measures which all remained significant predictors of OCB. These findings were inconsistent with previous studies which found that state measures accounted for variance in OCB beyond trait measures of affect (George, 1989, 1991; Tsai et al, 2007). The finding in regards to state affect is particularly surprising due to the completed theoretical work. In part this finding could be due to the inclusion of satisfaction. It is possible that satisfaction accounts for variance in OCB that is due to situations and that state affect does not add to this relationship. Although significant results were not found, caution should be used when interpreting these results. The analyses were based on a small number of studies and additional research should be conducted to form a more conclusive result.

The final contribution of this study is the estimation of the importance of affect in work performance. Social scientists have touted an affective revolution (Barsade, Brief, & Spataro, 2003; Rafaeli & Sutton, 1987, 1989, 1990, 1991; Sutton & Rafaeli, 1988) that will drastically alter the organizational science. This study provides the first review of the proportion of variance that multiple forms of affect explain in work performance. Affect clearly plays a role in effective work performance, with trait affect, job satisfaction, and state affect together explaining approximately 7% of the variance in job performance and 10% of the variance in OCB. However, consistent with Hoffman, Blair, Meriac, and Woehr (2007) the frequently hypothesized differential relationship between affect and OCB and affect and task performance, while evident, was not especially pronounced. Finally, despite clear evidence for the covariance between affect and performance, the three forms of affect did not explain substantial variance in work performance. By way of contrast, Meriac, Hoffman, Woehr, and Fleisher (2008) estimated

that intelligence, five factor model personality constructs, and skills explained approximately 30% of the variance in performance and Judge, Bono, and Ilies (2002) estimated that the five factor together model explained around 25% of the variance in effective leadership. Thus, although affect is clearly a correlate of work performance and a construct domain that warrants further attention, affect does not appear to be a particularly strong predictor of work performance, especially relative to more established individual differences.

Moderators of Affect-Performance

In addition to the main effect of affect on performance, this study further advances the literature by investigating substantive moderators of these relationships. The two most consistent moderators were rater source and time lag between measures of state affect and performance. The current results suggest that it may be important to consider the source of the ratings when examining the effects of affect on performance. Both positive trait and state affect were more strongly related to self ratings of performance than to other's ratings of performance. It is quite possible that those with positive emotions view everything, including their own performance, more positively. Further, it is possible those with positive emotions actually exaggerate their performance and overestimate their contribution to others because of their enhanced outlook. This is the rationale (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) behind the common practice of controlling for state affect prior to examining relationships between variables that are measured using all self reports. The thinking is that by partialling out an extraneous variable, such as affect, research will paint a clearer picture of substantive relationships and not allow for the effects of any situational factors. To some degree, this practice is supported by the stronger relationships among positive state affect and self ratings relative to other ratings. Nevertheless, the difference in magnitude between self and others' ratings was small, suggesting that the

basing effect of positive state affect on ratings of performance is perhaps weaker than is often presumed. In other words, given that state affect also correlated with others' ratings of performance, a large portion of the covariance between state affect and self reports of performance appears to reflect true variance, rather than self report bias (Williams, Gavin, & Williams, 1996). Consequently, the common practice of controlling for state affect prior to examining substantive relationships may actually attenuate observed relationships. Still, it is important to note that these findings only pertain to self reports of performance, and therefore, future research is needed to investigate whether the respondent state affect reflects as biasing factor in the measurement of other constructs.

In contrast to the differential relationships between self and other reports and positive affect, negative trait affect was not as strongly related to self ratings of performance as was other's performance ratings. This finding is consistent with the notion that individuals typically tend to view themselves in a more positive light (Dunning, Heath, & Suls, 2004). Even though individuals have high levels of negative affect, they may still view themselves in a more positive way or as less bad in order to better their self concept.

In addition to examining the influence of rater source, it is also important to consider the situational or contextual factors associated with jobs. Results were consistent across the various affect and performance relationships. As the complexity of the job increased, so did the magnitude of the relationship between affect and performance.

High complexity jobs are typified by changing job requirements (Alvares & Hulin, 1972, 1973) and thus less defined criteria for performance standards. When individuals are faced with ambiguous or changing situations affect often exerts a stronger effect on stimuli (Varma, DeNini,

& Peters, 1996). Accordingly, it is not surprising that affect exerted a stronger influence on performance for more complex jobs relative to less complex jobs in the present study.

Alternately, it is possible that as a job becomes more complex, it is more entangled and blurred with other jobs, resulting in increased interdependence and the demand for coordination. Therefore, when a job becomes more complex, employees often have to work with more individuals or interact in group settings. Thus, increased complexity and dependence on others makes the role of emotions and dealing with others more important. As a job becomes more complicated it becomes necessary to prevent your best possible self, remain in a positive mood, and have positive interactions with others.

Additionally, across the various types of affect, field studies resulted in higher relationships than did lab studies. This is largely due to the fact that lab studies produce an artificial setting which may not have little in common with the true and complex reality of the real world (Black, 1955). Such environments, like that of the workplace, are complex and are likely harder to replicate in a laboratory setting. Further, critics of laboratory research state that a complex and intricate phenomenon like affect cannot and should not be studied in the laboratory (Black, 1955). Affect created through a laboratory study is artificial and likely does not translate to real life. Although field studies resulted in larger effect sizes than lab studies, results should be interpreted with caution due to the small k's.

Longitudinal Influence of State Affect

When performance and state affect are measured simultaneously the resulting relationship is stronger than indices taken at different times. Although simultaneous measures produced larger effect sizes, the magnitude of the difference was small and state affect continued to have moderate relationships with later measures of performance. Separating measures taken

simultaneously and measures take at different times was particularly important because it provided evidence that affect is not just important at the time of performance. State affect is also important when assessing performance at a later time. Moreover, these results held when controlling for the influence of trait affect on performance. These findings provide strong support for George's (1989) assertions that state affect is a key predictor of performance and one that has a unique effect on performance beyond that which is explained by dispositional affect.

Although it is clear that state affect plays a role in performance that cannot be attributed to simultaneous measurement or the influence of trait affect, these findings are admittedly somewhat counterintuitive. George (1989f) suggests two mechanisms that account for the unique relationship between state affect and subsequent performance. First, although state affect is indeed a relatively transient state, affect consistency theory proposes that individuals strive to stay in a stable state (Wood, Heimpel, Manwell, & Whittington, 2009). Thus, it is likely that employees will often remain in the same emotional state while at work, even if their dispositional affect differs from their mood at work. Second, changes in state affect are caused by situational factors (George, 1989), which often remain relatively stable while at work. For these reasons, state affect is expected to be relatively stable in a given situation yet potentially different from dispositional affect, allowing for the longitudinal validity of state affect and its incremental validity beyond dispositional affect in predicting performance outcomes.

Practical Implications

The findings that both positive and negative affect influences performance implies that organizations should consider ways to increase positive emotions, while at the same time decrease negative emotions. First, past research has shown that relatively innocuous manipulations, such as providing employees with cookies, can have meaningful influence on

increasing employee mood (Brief, Butcher, & Roberson, 1995). If such minor manipulations influence employee affect, it is possible that organizations can implement cost effective changes that can have a pervasive effect on employee mood and subsequent productivity. More recently, research has shown that different leadership styles are effective at enhancing follower positive mood (Bono & Ilies, 2006). Because state affect is partially dependent on the situation (George, 1989, 1991) it is especially important to have an environment which elicits positive emotions from the employee and helps induce successful performance. Second, organizations can choose to select individuals based on their level of affect. Findings from this study and previous research have shown that trait affect and now state affect are in fact related to performance. Measures of affect should be added to other common personality selection tools (e.g. the Big Five).

An additional practical implication can be drawn from the longitudinal and incremental effects of state affect. Because measures of state affect provided unique information in regard to performance, it is important to consider transient states in addition to more stable traits. Although traits influence states, is it the state that allows researchers and organizations to examine how the situation and person interact. This provides information that may not be tapped via trait measures of affect. State measures would allow organizations to identify those individuals who may experience states while at work that are inconsistent to their level of trait affect, thus providing additional information about the employee that could aid the organization in improving the work environment for that employee and similar employees.

Limitations and Directions for Future Research

Despite these contributions, this study was not without limitations. Some of the effect sizes in this study were based on a small number of primary studies and should be interpreted with caution. For instance, very few studies considered the effects of negative state affect on job

performance and none examined negative state affect and OCB. Given the promising effects of positive state affect and theoretical suggestions that negative emotions are especially important predictors relative to positive emotions that negative state affect may also be fruitful area for research. Similarly and consistent with prior meta-analyses (Judge, Bono, & Ilies, 2002), existing data did not allow for the simultaneous examination of multiple moderators. Although evidence was found for moderation associated with many of the observed relationships, the credibility intervals associated with the moderator variables remained relatively large, suggesting additional moderators. Additional primary studies need to be completed, and additional substantive moderators need to be identified in order to further understand the interplay between affect and performance. Future research should examine the effects of additional moderators such as the type of affect measure and job type. Examining type of affect measure would allow researchers to choose the measure that most fully captures the relationship between affect and performance. Further examination of job type would allow researchers to identify those jobs that could most aid in having a workforce with more positive moods. For instance, perhaps customer service oriented jobs benefit more from workers with more positive mood states. Moreover, this information could be used to target specific sectors of an organization for interventions designed to enhance employee affect.

Although this review established consistent relationships between affect and performance, it was not possible to establish causal inferences regarding these relationships. This is especially important in regards to the discussion of the relationship between job satisfaction or state affect and performance. The directional relationship between satisfaction and performance has been greatly debated (e.g. Judge et al, 2001), but the same consideration should be given to state affect. Often depicted as the effect of the state on performance (e.g. Barsade, 2002; Fisher,

2003; George, 1991; Staw, Sutton, & Pelled, 1994), it is likely that the reciprocal is also true. Future research should make strides to examine this complex relationship.

A final limitation pertains to the estimation of relationships that were not central to the study for use in regression analyses. In order to complete the regression analysis, a full correlation matrix was needed. However, elements of the correlation matrix (e.g., the relationship between state and trait affect) only studies that met the a priori decision criteria were used (e.g., studies that investigated the relationship between state/trait and performance). Thus, several studies examining the ancillary relationships variables were not included. Nonetheless, the relationship between job satisfaction and state affect (Huelsman, Munz, & Furr, 2003), and state and trait affect (George, 1991) is consistent with past research, supporting our approach.

Summary and Conclusions

The current meta-analysis extended prior affect research by providing the first summary of the relationship between state affect and performance, empirical support for the unique contribution of state affect beyond trait affect and satisfaction in predicting performance outcomes. Based on these observed relationship between affect and performance, researchers and practitioners are encouraged to continue to consider the ways in which affect contributes to effective organizational functioning.

1 No research has examined the effects of negative state affect and OCB, therefore this meta-analysis does not examine the relationship.

REFERENCES

Studies included in the meta-analysis are denoted with an asterisk.

Abramis, D.J. (1994). Work role ambiguity, job satisfaction, and job performance: Meta-analyses and review. *Psychological Reports,* 75, 1411-1433.

*Allen, T.D., Facteau, J.D., & Facteau, C.L. (2004). Structured interviewing for OCB: Construct validity, faking, and the effects of question type. *Human Performance,* 17, 1-24.

Alvares, K.M. & Hulin, C.L. (1972). Two explanations of temporal changes in ability-skill relationships: A literature review and theoretical analysis. *Human Factors*, 14, 295-308.

*Amabile, T.W., Barsade, S.G., Mueller, J.S., & Staw, B.M. (2005). Affect and creativity at work. *Administrative Science Quarterly,* 50, 367-403.

Andrews, F. M., & Withey, S. B. (1976). *Social indicators of well- being: America's perception of life quality.* New York: Plenum Press

Arthur, W., Bennett, W., & Huffcutt, A.I. (2001). *Conducting meta-analysis using SAS.* Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Baltes, Boris B. Briggs, Thomas E. Huff, Joseph W. (1999). Flexible and compressed workweek schedules: A meta-analysis of their effects on work-related criteria. *Journal of Applied Psychology*, 84, 496-513.

Barrick, M.R. & Mount, M.K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology,* 44, 1-26.

*Barsade, S.G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly*, 47, 644-675.

Barsade, S.G., Brief, A.P. & Spataro, S.E. (2003). The affective revolution in organizational behavior: The emergence of a paradigm. In J. Greenberg (Ed.), *Organizational behavior:*

The state of the science 2nd ed. (3-52). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Barsade, S.G. & Gibson, D.E. (2007). Why does affect matter in organizations? *Academy of Management Perspectives,* 21, 36-59.

Bell, P.A. (1978). Affective state, attraction, and affiliation: Misery loves happy company, too. *Personality and Social Psychology Bulletin,* 4, 616-619.

Black, V. (1955). Laboratory versus field research in psychology and the social sciences. *British Journal for the Philosophy of Science,* 5, 319-330.

*Bono, J.E. & Ilies, R. (2006). Charisma, positive emotions and mood contagion. *Leadership Quarterly,* 17, 317-334.

Borman, W. C., & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt & W. C. Borman (Eds.). *Personality selection* (71–98). San Francisco: Jossey-Bass.

Borman, W. C., & Motowidlo, S. J. (1997). Task performance and contextual performance: The meaning for personnel selection research. *Human Performance,* 10, 99-109.

Bower, G.H. (1981). Mood and Memory. *American Psychologist,* 36, 129-148.

Bowling, N.A., Hendricks, E.A., & Wagner, S.H. (2008). Positive and negative affectivity and facet satisfaction: A meta-analysis. *Journal of Business and Psychology,* 23, 115-125.

Brady, J.V. (1970). Emotion: Some conceptual problems and psycho-physiological experiments. In M. B. Arnold (Ed.), *Feelings and Emotions: The Loyola Symposium* (69-100). San Diego: Academic Press.

Brayfield, A.H. & Crockett, W.H. (1955). Employee attitudes and employee performance. *Psychological Bulletin,* 52, 396-424.

Brief, A.P. (1988). *Attitudes in and around organizations.* Thousand Oaks, CA: Sage.

Brief, A.P., Butcher, A.H., & Roberson, L. (1995). Cookies, disposition, and job attitudes: The effects of positive mood-inducing events and negative affectivity on job satisfaction in a field experiment. *Organizational Behavior and Human Decision Processes,* 62, 55-62.

Brief, A.P. & Roberson, L. (1989). Job attitude organization: An exploratory study. *Journal of Applied Social Psychology,* 19, 717-727.

Brief, A.P. & Weiss, H.M. (2002). Organizational behavior: Affect in the workplace. *Annual Review of Psychology,* 53, 279-307.

Burke, M. J., Brief, A. P., & George, J. M. (1993). The role of negative affectivity in understanding relations between self-reports of stressors and strains: A comment on the applied psychology literature. *Journal of Applied Psychology,* 78, 402-412.

Bynum, B.H. Unpublished SAS program manuscript, University of Georgia, Athens, GA.

Campbell, A. (1976). Subjective measures of well-being. *American Psychologist,* 31, 117-124.

Carlson, M., Charlin, V., & Miller, N. (1988). Positive mood and helping behavior: A test of six hypotheses. *Journal of Personality and Social Psychology*, 55, 211-229.

Carson, T.P. & Adams, H.E. (1980). Activity valence as a function of mood change. *Journal of Abnormal Psychology,* 89, 368-377.

Carver, C.S., & White, T.L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology,* 67, 319–333.

Clark, D.M. & Teasdale, J.D. (1985). Constraints on the effects of mood on memory. *Journal of Personality and Social Psychology,* 48, 1595-1608.

Crawford, J.R. & Henry, J.D. (2004). The positive and negative affect schedule (PANAS): Construct validity, measurement properties and normative date in a large non-clinical sample. *British Journal of Clinical Psychology,* 43, 245-265.

*Cropanzano, R., James, K., & Konovsky, M.A. (1993). Dispositional affectivity as a predictor of work attitudes and job performance. *Journal of Organizational Behavior,* 14, 595-606.

Cropanzano, R. & Wright, T.A. (2001). When a happy worker really is a productive worker: A review and further refinement of the happy-productive worker thesis. *Consulting Psychology Journal: Practice and Research*, 53, 182-199.

Diener, E., & Emmons, R.A. (1984). The independence of positive and negative affect. *Journal of Personality and Social Psychology*, 47, 1105-1117.

Diener, E. & Iran-Nejad, A. (1986). The relationship in experience between various types of affect. *Journal of Personality and Social Psychology*, 50, 1031-1038.

Dunning, D., Heath, C., & Suls, J.M. (2004). Flawed self-assessment: Implications for health, education, and the workplace. *Psychological Science in the Public Interest*, 5, 69-106.

*Fisher, C.D. (2002). Mood and emotions while working: Missing pieces of job satisfaction? *Journal of Organizational Behavior,* 21, 185-202.

Forgas, J.P. (1992). On bad mood and peculiar people: Affect and person typicality in impression formation. *Journal of Personality and Social Psychology,* 62, 863–875.

Forgas, J.P., Bower, G.H., & Krantz, S.E. (1984). The influence of mood on perceptions of social interactions. *Journal of Experimental Social Psychology*, 20, 497-513.

Forgas, J.P., Bower, G.H., & Moylan, S.J. (1990). Praise or blame? Affective influences on attributions for achievement. *Journal of Personality and Social Psychology,* 59, 809-819.

Forgas, J. P., & George, J. M. (2001). Affective influences on judgments and behavior in organizations: An information processing perspective. *Organizational Behavior and Human Decision Processes,* 86, 3-34.

*Fortunato, V.J. & Williams, K.J. (2002). The moderating effects of dispositional affectivity on performance and task attitudes in a goal-setting context. *Journal of Applied Social Psychology,* 32, 2321-2353.

*Fortunato, V.J. (2004). A comparison of the construct validity of three measures of negative affectivity. *Educational and Psychological Measurement,* 64, 271-289.

George, J.M. (1989). Mood and absence. *Journal of Applied Psychology,* 74, 317-324.

*George, J.M. (1991). State or trait: Effects of positive mood on prosocial behaviors at work. *Journal of Applied Psychology,* 76, 299–307.

George, J.M. (1992). The role of personality in organizational life: Issues and evidence. *Journal of Management,* 18, 185-213.

George, J.M. (1998). Salesperson mood at work: Implications for helping customers. *Journal of Personal Selling & Sales Management,* 18, 23-30.

George, J.M. & Brief, A.P. (1992). Feeling good-doing good: A conceptual analysis of the mood at work-organizational spontaneity relationship. *Psychological Bulletin,* 112, 310-329.

George, J.M. & Brief, A.P. (1996). Motivational agendas in the workplace: The effects of feelings on focus of attention and work motivation. In B.M. Staw & L.L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews* (75-109). US: Elsevier Science.

George, J.M. & Jones, G.R. (1996). The experience of work and turnover intentions: Interactive effects of value attainment, job satisfaction, and positive mood. *Journal of Applied Psychology,* 81, 318-325.

George, J.M. & Jones, G.R. (1997). Experiencing work: Values, attitudes, and moods. *Human Relations,* 50, 393-416.

Gray, J.A. (1970). The psychophysiological basis of introversion-extraversion. *Behavior Research and Therapy,* 8, 249–266.

Hackman, J.R. & Oldham, G.R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance,* 16, 250-279.

Hanson, M. & Borman, W.C. (2006). Citizenship Performance: An Integrative Review and Motivational Analysis. In W. Bennett, C.E. Lance, & Woehr, D.J. (Eds.), *Performance measurement: Current perspectives and future challenges* (141-173). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Harrison, D.A., Newman, D.A., & Roth, P.L. (2006). How important are job attitudes? Meta-analytic comparisons of integrative behavioral outcomes and time sequences. *Academy of Management Journal,* 49, 305-325.

Herzberg, F., Mausnes, B., Peterson, R.O., & Capwell, D.F. (1957). *Job attitudes; review of research and opinion.* Oxford, England: Psychological Service of Pittsburgh.

Hoffman, B.J., Blair, C.A., Meriac, J.P., & Woehr, D.J. (2007). Expanding the criterion domain? A quantitative review of the OCB literature. *Journal of Applied Psychology*, 92, 555-566.

Hoppock, R. (1935). *Job Satisfaction.* New York: Harper.

Hulesman, T.J., Munz, D.C., & Furr, R.M. (2003). The role of affect as a mediator variable: An application to organizational psychology. *Individual Differences Research,* 1, 173-188.

Iaffaldano, M.T. & Muchinsky, P.M. (1985). Job satisfaction and job performance: A meta-analysis. *Psychological Bulletin*, 97, 251-273.

*Johnson, S. (2008). I second that emotion: Effects of emotional contagion and affect at work on leader and follower outcomes. *The Leadership Quarterly*, 19, 1-19.

*Jones, J.R & Schaubroeck, J. (2004). Mediators of the relationship between race and organizational citizenship behavior. *Journal of Managerial Issues, 4, 505-527.*

Judge, T.A., Bono, J.E., & Ilies, R. (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology,* 87, 765-780.

Judge, T.A. & Ilies, R. (2004). Affect and job satisfaction: A study of their relationship at work and at home. *Journal of Applied Psychology,* 89, 661-673.

Judge, T.A. & Larsen, J.T. (2001). Dispositional affect and job satisfaction: A review and theoretical extension. *Organizational Behavior and Human Decision Processes,* 86, 67–98.

Judge, T.A. & Piccolo, R.F. (2004). Transformation and transactional leadership: A meta-analytic test of their relative validity. *Journal of Applied Psychology,* 89, 755-768.

Judge, T.A., Thoresen, C.J., Bono, J.E., & Patton, G.K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin,* 127, 376-407.

*Judge, T.A., Thoresen, C.J., Pucik, V., & Welbourne, T.M. (1999). Managerial coping with organizational change: A dispositional perspective. *Journal of Applied Psychology,* 84, 107–122.

Katz, D., & Kahn, R.L. (1978). *The social psychology of organizations, 2nd Ed*. New York, NY: John Wiley and Sons.

Kaplan, S., Bradley, J.C., Luchman, J.N., & Haynes, D. (2009). On the role of positive and negative affectivity in job performance: A meta-analytic investigation. *Journal of Applied Psychology,* 94, 162-176.

Kornhauser, A.W. & Sharp, A.A. (1932). Employee attitudes: Suggestions from a study in a factory. *Personnel Journal,* 10, 393-404.

Landy, F.J. (1978). An opponent process theory of job satisfaction. *Journal of Applied Psychology,* 63, 533-547.

Larsen, J.T., McGraw, A.P., & Cacioppo, J.T. (2001). Can people feel happy and sad at the same time? *Journal of Personality and Social Psychology,* 81, 684-696.

*Lee, K. & Allen, N.J. (2002). Organizational citizenship behavior and workplace deviance: The role of affect and cognitions. *Journal of Applied Psychology,* 87, 131-142.

Locke, E.A. (1970). Job satisfaction and job performance: A theoretical analysis. *Organizational Behavior & Human Performance,* 5, 484-500.

McKennell, A.C. (1978). Cognition and affect in perceptions of well-being. *Social Indicators Research,* 5, 389-426.

Mehrabian, A. & Russell, J.A. (1975). Environmental effects on affiliation among strangers. *Humanitas,* 11, 219-230.

Meriac, J.P., Hoffman, B.J., Woehr, D.J., & Fleisher, M.S. (2008). Further evidence for the validity of assessment center dimensions: A meta-analysis of the incremental criterion-related validity of dimension ratings. *Journal of Applied Psychology*, 93, 1042-1052.

Mitchell, T.R. (1974). Expectancy models of job satisfaction, occupational preference, and effort: A theoretical, methodological, and empirical appraisal. *Psychological Bulletin,* 81, 1053-1077.

Moorman, R.H., Niehoff, B.P., & Organ, D.W. (1993). Treating employees fairly and organizational citizenship behavior: Sorting the effects of job satisfaction, organizational commitment, and procedural justice. *Employee Responsibilities and Rights Journal,* 6, 209-225.

Morris, W. N. & Reilly, N.P. (1987). Toward the self-regulation of mood: Theory and research. *Motivation and Emotion,* 11, 215-249.

Mossin, A. C. (1949). *Selling performance and contentment in relation to school background.* New York: Bureau of Publications, Teachers College, Columbia University.

Motowidlo, S. J. (1982). Relationship between self-rated performance and pay satisfaction among sales representatives. *Journal of Applied Psychology,* 67, 209-213.

Motowidlo, S.J. & Van Scotter, J.R. (1994). Evidence that task performance should be distinguished from contextual performance. *Journal of Applied Psychology,* 79, 475-480.

Munsterberg, H. (1913). *Psychology and Industrial Efficiency.* Boston: Houghton Miffiin.

Nathanson, C. A., & Becker, M. H. (1973). Job satisfaction and job performance: An empirical test of some theoretical propositions. *Organizational Behavior and Human Performance,* 9, 267-279.

The National Center for O*NET Development. (2008). The National Center for O*NET Development. Retreived March 2008, from O*Net website: http://www.onetcenter.org/dl_files/JobZoneProcedure.pdf

Organ, D.W. (1988). *Organizational citizenship behavior: The good solider syndrome.* Lexington, MA: Lexington Books.

Organ, D.W. & Lingl, A. (1995). Personality, satisfaction, and organizational citizenship behavior. *The Journal of Social Psychology,* 135, 339-350.

Organ, D.W. & Near, J.P. (1985). Cognition vs. affect in measures of job satisfaction. *International Journal of Psychology,*20, 241-253.

Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology,* 48, 775–802.

Orpen, C. (1974). The effect of reward contingencies on the job satisfaction-task performance relationship: An industrial experiment. *Psychology,* 11, 9-14.

Orpen, C. (1978). Relationship between job satisfaction and job performance among western and tribal black employees. *Journal of Applied Psychology,* 63, 263-265.

Penley, L. E., & Hawkins, B. L. (1980). Organizational communication, performance, and job satisfaction as a function of ethnicity and sex. *Journal of Vocational Behavior,* 16, 368-384.

Petty, M. M., McGee,G.W., & Cavender, J.W. (1984). A meta-analysis of the relationships between individual job satisfaction and individual performance. *Academy of Management Review,* 9, 712-721.

Podsakoff, P.M., MacKenzie, S.B., Lee, J., & Podsakoff, N.P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology,* 88, 879-903

Podsakoff, P., MacKenzie, S., Paine, J., & Bachrach, D. (2000). Organizational Citizenship Behaviors: A Critical Review of the Theoretical and Empirical Literature and Suggestions for Future Research. *Journal of Management,* 26, 513-563.

Rafaeli, A & Sutton, R.I. (1987). Expression of emotion as part of the work role. *Academy of Management Review,* 12, 23-37.

Rafaeli, A & Sutton, R.I. (1989). When clerks meet customers: A test of variables related to emotional expressions on the job. *Journal of Applied Psychology,* 74, 385-393.

Rafaeli, A & Sutton, R.I. (1990). Busy stores and demanding customers: How do they affect the display of positive emotion? *Academy of Management Journal,* 33, 623-637.

Rafaeli, A & Sutton, R.I. (1991). Emotional contrast strategies as means of social influence: Lessons from criminal interrogators and bill collectors. *Academy of Management Journal,* 34, 749-775.

Raju, N.S., Burke, M.J., Normand, J., & Langlois, G.M. (1991). A new meta-analytic approach. *Journal of Applied Psychology,* 76, 432-446.

Rhoades, J.A., Arnold, J., & Jay, C. (2001). The role of affective traits and affective states in disputants' motivation and behavior during episodes of organizational conflict. *Journal of Organizational Behavior,* 22, 329-345.

*Robbins, T.L. & DiNisi, A.S. (1998). Mood vs. interpersonal affect: Identifying process and rating distortions in performance appraisal. *Journal of Business and Psychology,* 12, 313-325.

Russell, J.A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology,* 39, 1161-1178.

Schappe, S.P. (1998). The influence of job satisfaction, organizational commitment, and fairness perceptions on organizational citizenship behavior. *The Journal of Psychology,* 132, 277-290.

Schmidt, J.E. & Hunter, F.L. (2004). *Methods of meta-analysis: Correcting Error and Bias in Research Findings* (2nd Ed). Thousand Oaks, CA: Sage.

Schriesheim, C. A., & Murphy, C. J. (1976). Relationships between leader behavior and subordinate satisfaction and performance: A test of some situational moderators. *Journal of Applied Psychology,* 67, 634-641.

Schwab, D. P., & Cummings, L. L. (1970). Theories of performance and satisfaction: A review. *Industrial Relations,* 9, 408-430.

Smith, P.C., Kendall, L.M., & Hulin, C.L. (1969). *The measurement of* satisfaction *in work and retirement: A strategy for the study of attitudes.* Oxford, England: Rand Mcnally.

Smith, C.A., Organ, D., & Near, J.P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology,* 68, 653–663.

*Spector, P.E., Fox, S., & Van Kaywyk, P.T. (1999). The role of negative affectivity in employee reactions to job characteristics: Bias effect or substantive effect? *Journal of Occupational and Organizational Psychology,* 72, 205-218.

Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal Conflict at Work Scale, Organizational Constraints Scale, Quantitative Workload Inventory, and Physical Symptoms Inventory. *Journal of Occupational Health Psychology,* 3, 356–367.

Spencer, D. G., & Steers, R. M. (1981). Performance as a moderator of the job satisfaction-turnover relationship. *Journal of Applied Psychology,* 66, 511-514.

Staw, B.M. (1984). Organizational behavior: A review and reformulation of the field's outcome variables. *Annual Review of Psychology,* 35, 627-666.

*Staw, B.M., & Barsade, S.G. (1993). Affect and managerial performance: A test of the sadder-but-wiser vs. happier-and-smarter hypotheses. *Administrative Science Quarterly,* 38, 304–331.

Staw, B.M., Bell, N.E., & Clausen, J.A. (1986). The dispositional approach to job attitudes: A lifetime longitudinal test. *Administrative Science Quarterly*, 31, 56-77.

*Staw, B.M., Sutton, R.I., & Pelled, L.H. (1994). Employee positive emotions and outcomes at work. *Organization Science*, 5, 51-71.

Steers, R. M. (1975). Effects of need for achievement on the job performance-job attitude relationship. *Journal of Applied Psychology*, 60, 678-682.

Strauss, P. S. (1966). Psychology of the scientist: XIX. Job satisfaction and productivity of engineers and scientists. *Perceptual and Motor Skills,* 23, 471-476.

Sutton, R.I. & Rafaeli, A. (1988). Untangling the relationship between displayed emotions and organizational sales: The case of convenience stores. *Academy of Management Journal,* 31, 461-487.

Szilagyi, A. D. (1980). Causal inferences between leader reward behavior and subordinate performance, absenteeism, and work satisfaction. *Journal of Occupational Psychology*, 53, 195-204.

Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In T. A. Hussain & J. D. Maser (Eds.), *Anxiety and the anxiety disorders* (681–706). Hillsdale, NJ: Erlbaum.

Tellegen, A., Lykken, D.T., Bouchard, T.J., Wilcox, K.J., Segal, N.L., & Rich, S. (1988). Personality similarity in twins reared apart and together. *Journal of Personality and Social Psychology,* 54, 1031–1039.

Thoresen, C.J., Kaplan, S.A., Barsky, A.P., Warren, C.R., & de Chermont, K. (2003). The Affective Underpinnings of Job Perceptions and Attitudes: A Meta-Analytic Review and Integration. *Psychological Bulletin,* 129, 914-945.

*Totterdell, P. (1999). Mood scores: Mood and performance. *The British Journal of Psychology, 90*, 317-332.

Tsai, W., Chen, C., & Liu, H. (2007). Test of a model linking employee positive moods and task performance. *Journal of Applied Psychology,* 92, 1570-1583.

Varma, A., DeNisi, A.S, & Peters, L.H. (1996). Interpersonal affect and performance appraisal: A field study. *Personnel Psychology*, 49, 341-360.

*Van Scotter, J.R. & Motowidlo, S.J. (1996). Interpersonal facilitation and job dedication as separate facets of contextual performance. *Journal of Applied Psychology,* 81, 525-531.

*Van Yperen, N.W. (2003). On the link between different combinations of Negative Affectivity (NA) and Positive Affectivity (PA) and job performance. *Personality and Individual Differences,* 35, 1873-1881.

Viswesvaran, C. & Ones, D.S. (1995). Theory testing: Combining psychometric meta-analysis and structural equation modeling. *Personnel Psychology, 48,* 865–885.

Vroom, V.H. (1964). *Work and motivation.* Oxford, England: Wiley.

Watson, D. (2000). *Mood and temperament.* New York: Guilford Press.

Watson, D. (2004). Stability versus change, dependability versus error: Issues in the assessment of personality over time. *Journal of Research in Personality,* 38, 319–350.

Watson, D. & Clark, L.A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin,* 96, 465-490.

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., & Pennebaker, J.W. (1989). Health complaints, stress, and distress: Exploring the central role of negative affectivity. *Psychological Review,* 96, 234–254.

Watson, D. & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin,* 98, 219–235.

Watson, D., & Walker, L.M. (1996). The long-term stability and predictive validity of trait measures of affect. *Journal of Personality and Social Psychology,* 70, 567–577.

Watson, D., Wiese, D., Vaidya, J., & Tellegen, A.E. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology*, 76, 820–838.

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.

*Williams, L.J., Gavin, M.B., & Williams, M.L. (1996). Measurement and nonmeasurement process with negative affectivity and employee attitudes. *Journal of Applied Psychology,* 81, 88-101.

Wood, J.V., Heimpel, S.A., Manwell, L.A., & Whittington, E.J. (2009). This mood is familiar and I don't deserve to feel better anyway: Mechanisms underlying self-esteem differences in motivation to repair sad moods. *Journal of Personality and Social Psychology,* 96, 363-380.

*Wright, C.W. & Sablynski, C.J. (2008). Procedural justice, mood, and prosocial personality influence on organizational citizenship behavior. *North American Journal of Psychology,* 10, 397-412.

Wright, W.F. & Bower, G.H. (1992). Mood effects on subjective probability assessment. *Organizational Behavior and Human Decision Processes,* 52, 276-291.

Wright**,** T.A. & Cropanzano**,** R. (1998). Emotional exhaustion as a predictor of job performance and voluntary turnover. *Journal of Applied Psychology,* 83, 486-493.

*Wright**,** T.A., Cropanzano**,** R., Denney, P.J., & Moline, G.L. (2002). When a happy worker is a productive worker: A preliminary examination of three models. *Canadian Journal of Behavioral Sciences,* 34, 146-150.

*Wright**,** T.A., Cropanzano**,** R., & Meyer, D.G. (2004). State and trait correlates of job performance: A tale of two perspectives. *Journal of Business and Psychology,* 18, 365-383.

*Wright, T.A., & Staw, B.M. (1999). Affect and favorable work outcomes: Two longitudinal tests of the happy–productive worker thesis. *Journal of Organizational Behavior,* 20, 1–23.

Zellars, K.L., & Perrewe, P.L. (2001). Affective personality and the content of emotional social support: Coping in organizations. *Journal of Applied Psychology,* 86, 459–467.