A META-ANALYTIC REVIEW OF DISCRETE EMOTIONS AND WORK BEHAVIORS IN ORGANIZATIONS

by

Courtney E. Williams

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Approved by:

_____
Dr. Janaki Gooty

_____
Dr. Linda R. Shanock

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Dr. George C. Banks

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Dr. Enrica N. Ruggs

ABSTRACT

COURTNEY E. WILLIAMS. A meta-analytic review of discrete emotions and work behaviors in organizations. (Under the direction of DR. JANAKI GOOTY & DR. LINDA R. SHANOCK)

The study of affect in the workplace is a flourishing domain of research in the organizational sciences since the affective revolution started in the 1980s (Barsade, Brief, & Spataro, 2003). Following calls for more research specifically with discrete emotions (e.g., Barsade et al., 2003; Barsade & Gibson, 2007; Briner & Kiefer, 2005; Gooty, Gavin & Ashkanasy, 2009), theoretical and empirical literature in discrete emotions has started to accumulate suggesting the potent role of emotions in workplace behavior. Despite these findings, there is no comprehensive review of discrete emotions and work behaviors. As such, I conduct a meta-analytic review of discrete emotions in relation to three primary work outcomes – job performance, organizational citizenship behavior, and counterproductive work behavior. Additionally, I consider level of analysis and event referent in the emotion measurement as methodological moderators in the emotion-work behavior associations.

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CHAPTER 1: INTRODUCTION

The integration of affect and emotion in the organizational sciences has been well documented since the 1980s (Hochschild, 1983; Rafaeli & Sutton, 1987; 1989; Staw, Bell, & Clausen, 1986) with theoretical and empirical research flourishing throughout this period. While debate has ensued in the management and applied psychology literature concerning the definitions of trait affect, mood (otherwise known as state affect), and emotion (e.g., Briner & Kiefer, 2005; Frijda, 1993; George & Brief, 1992; Lazarus, 1991; Ortony, Clore, & Collins, 1988), this review adopts the predominant scholarly viewpoint in defining affect, mood/state affect, and emotion. Trait affect is a stable disposition with a generally positive or negative valence; whereas moods (or state affect) are a positive or negative state lacking a specific trigger (Briner & Kiefer, 2005; Fisher, 2000).

Discrete emotions are intense reactions to a person, object, or event (Fisher, 2000; 2002; Frijda, 1993; Gohm & Clore, 2002; Izard, 1991; Lazarus, 1991; Ortony et al., 1988). In contrast to mood, discrete emotions are transient and tied to the preceding affective event that elicited the emotion; whereas the experience of mood is more diffused and longer in duration (Briner & Kiefer, 2005; Fisher, 2000; Frijda, 1993). Mood can be referred to as an overall pleasant/unpleasant dimension, or emotions "divorced from their antecedents," (Cropanzano, Weiss, Hale, & Reb, 2003, p. 843) as it lingers and the individual is unaware of any preceding affective event (can last up to a few weeks according to the development of the Positive and Negative Affect Schedule or PANAS: Watson, Clark, & Tellegen, 1988).

The 2000s marked a shift in focus for this domain when several, influential reviews identified a need for more empirical research on the role of discrete emotions rather than trait and state affect (e.g., Barsade, Brief, & Spataro, 2003; Barsade & Gibson, 2007; Brief & Weiss, 2002; Briner & Kiefer, 2005; Gooty, Gavin & Ashkanasy, 2009). In the nearly 20 years since these calls for a specific focus on discrete emotions, a critical mass of studies has emerged. While this is progress for the affect and emotions domain, the substantive validity of discrete emotions in terms of work behaviors is still unclear. Thus, a meta-analytic review of discrete emotions in the workplace and their utility in predicting important work outcomes is notably missing from the literature. This review is timely and needed to address three overarching issues that remain troublesome for the discrete emotion domain.

First, the emotions domain is plagued with inconsistent definitions of discrete emotions (see Barsade & Gibson, 2007; Briner & Kiefer, 2005; Elfenbien, 2007; Gooty et al., 2009 for reviews). For example, in a comprehensive review of the emotions literature, Elfenbein (2007) stated, “The academic literature has been extensive, but often only a loosely connected body of work with disparate themes all included under the banner of emotion” (p. 316). Frequently, the “banner of emotion” in organizational literature erroneously identifies affect, mood, and discrete emotion as synonymous. However, definitional boundaries are needed because, “for emotion to mean anything, it cannot mean everything” (Elfenbein, 2007, p. 316).

A key component of discrete emotions is that they elicit distinct motivational, cognitive, and behavioral reactions within the individual due to the unique appraisals associated with each emotion (Gohm & Clore, 2002; Izard, 1991). As such, subsuming

discrete emotions under the umbrella of positive and/or negative affect eliminates the unique cognitive, behavioral, and attitudinal reactions that are associated with each discrete emotion. Further, lumping each specific discrete emotion into the broad category of positive or negative emotions also prevents the analysis of the unique predictive power of each discrete emotion. For example, while both anger and fear are negative emotions, they typically lead to opposing behavioral reactions of approach (anger) versus avoidance (fear; Frijda, Kuipers, & ter Schure, 1989). Thus, definitional inconsistencies span not only the use of the terms affect, mood and emotion interchangeably, but also in using positive and negative valence for discrete emotions.

The second limitation in the emotions literature is that emotions are inherently multi-level constructs (with both intra- and inter-individual components), yet, they are rarely operationalized and analyzed as multi-level (Gooty et al., 2009). Theoretically, discrete emotions "change rapidly from day to day, and even from moment to moment" (Ashkanasy, 2003, p. 1492); thereby existing at the intra-individual level (Ashkanasy, 2003; Gooty et al., 2009; Weiss & Cropanzano, 1996). However, the majority of emotion research ignores the issue of level of analysis and/or presents theory at the intra-individual level (e.g., Affective Events Theory or AET: Weiss & Cropanzano, 1996) with misaligned research design, measurement, and inference drawing mostly at the inter-individual level (see Gooty et al., 2009 for a review of this issue). Here, I include and differentiate between studies at different levels of analyses (intra-individual, inter-individual, and team levels).

A third limitation for the emotions literature is the measurement of the experience of emotion. The traditional measures used for examining emotion experience (e.g.,

PANAS: Watson et al. (1988); Job-related Affective Well-being Scale or JAWS: Van Katwyk, Fox, Spector, & Kelloway, 2000; Job Emotions Scale or JES: Fisher, 2000) are often used with event referents that lack specificity (e.g., "at work" or "on the job"). As such, researchers ask participants to access a wide range of memories related to multiple targets in their daily work lives; thereby averaging across affective events with different targets and intensities to capture the experience of emotion at work. This issue fails to align with the definition of emotion in that it is an intense reaction to a specific person, object, or event (Fisher, 2000; 2002; Frijda, 1993; Gohm & Clore, 2002; Izard, 1991; Lazarus, 1991; Ortony et al., 1988).

In addition to these limitations in the emotions literature, curiously enough, there has been no report of meta-analytic evidence for the substantive validity of discrete emotions. While other meta-analytic reviews have claimed to examine discrete emotions, they inaccurately adopted the definitional inconsistencies of emotion and affect that were noted previously (e.g., Shockley, Ispas, Rossi, & Levine, 2012[1]) or they assess state and/or trait affect (e.g., Connolly & Viswesveran, 2000; Ng & Sorenson, 2009). My work provides a meta-analytic review of emotion and job performance, organizational citizenship behaviors (OCBs), and counterproductive work behaviors (CWBs) at multiple levels of analyses, spanning almost two decades (i.e., in alignment with the shift in focus to discrete emotions research in organizations), using the predominant definition of discrete emotion and a methodological moderator (depicted in Figure 1).

This work makes the following four contributions to the emotion in organizations literature. First, I correct for limitations in previous reviews by including all affective variables that use measurement that aligns with the definition of discrete emotion. In

other words, no matter the label given to the affective variable by the researcher (e.g., affect, mood, emotion), if the measurement aligns with the theoretical definition of discrete emotion, the study is included in the review. Likewise, studies that claim to measure emotion, but the measurement does not align with the theoretical definition of discrete emotion, are not included in this review. This will allow for a more complete understanding of discrete emotions in organizational research according to their definition (and in spite of definitional issues).

Second, I will differentiate studies with emotion-work associations by level of analysis in order to determine if and how these associations change as they traverse levels. Due to the theoretical nature of discrete emotions as an intra-individual construct, the misalignment of theory and measurement (i.e., measuring emotion at the inter-individual level when using theory that focuses on the intra-individual level) may influence reported associations in the literature. Third, I will include the use of emotion measurement as a moderator of emotion-work associations at all levels of analyses. Discrete emotions are defined as intense reactions to a person, object, or event, and thereby tied to their preceding affective event. As such, the event referent for emotion recall within the measure will be used as a methodological moderator (i.e., the specificity of the event referent).

The fourth and final, overarching contribution is to provide a meta-analytic review of the discrete emotions literature and ultimately provide support for the substantive validity of discrete emotions. These contributions will address the above limitations for both theory and research. In terms of theory, the unique behavioral and motivational tendencies of discrete emotions, as well as level of analysis, are

differentiated by emotion. For empirical research, a specific focus on alignment of both definition and level of analysis among theory, measurement, and research design is considered. Overall, this paper provides future research directions for emotion scholars based on a conceptual and meta-analytic review of a popular but disorganized literature.

CHAPTER 2: THEORETICAL DEVELOPMENT

When integrating discrete emotions into organizational life, three predominant theoretical perspectives can be used: cognitive appraisal theory (CAT: Lazarus, 1966; Lazarus & Folkman, 1984), affective event theory (AET: Weiss & Cropanzano, 1996), and the emotions as social information model (EASI model: Van Kleef, 2009; Van Kleef, De Dreu, & Manstead, 2010; Van Kleef, Van Doorn, Heerdink, & Koning, 2011). For the purpose of this paper, the meta-analytic model uses both the CAT and AET perspective as the EASI model highlights the social function of emotion to explain how emotion expression can influence the attitudes and behaviors of others. Therefore, it is often applied to leadership, negotiation, and other contexts (see Van Kleef, 2014 for a review) where expressed emotion (not in this review) is of focal interest versus experienced emotion (in this review).

CAT places a particular emphasis on the elicitation of emotion based on appraisal patterns that define the relationship between the emotional reaction and the environment of elicitation (Lazarus & Folkman, 1984). AET (Weiss & Cropanzano, 1996) emphasizes the consequences of emotion experience. The occurrence of daily hassles and uplifts, or affective events, that take place at work elicit a variety of discrete emotions with differential effects on work outcomes. AET also emphasizes that individuals will likely experience multiple affective events throughout the day, thus highlighting the intra-individual nature of the experience of emotion.

The proposed model for this review (shown in Figure 1) starts with the experience of discrete emotions (Box 1, Figure 1). Note that Box 1, Figure 1 not only includes specific discrete emotions, but also emotions categorized by their valence (i.e., positive

and negative emotions). This is representative of the literature to date as many studies examine emotion in reaction to an event, person, or object; however, they combine discrete emotion items into a measure of the overall valence category. The distinction between specific discrete emotions and emotion valence categories is a key component to this review as I will demonstrate how associations with work behaviors change when examining specific discrete emotions versus their valence categories.

2.1. Positive and Negative Discrete Emotions

While CAT and AET provide the overarching theoretical framework for the elicitation and consequences of emotion experiences (Lazarus & Folkman, 1984; Weiss & Cropanzano, 1996), each discrete emotion has different appraisal patterns and motivational/behavioral tendencies. Ortony and colleagues (1988) assert that emotions (at their core) are valenced reactions. Using this as a guiding framework, I organize the following section by valence and discuss positive and negative emotions. Based on the accumulated discrete emotion literature to this point in time, nine discrete positive emotions (happiness, hope, optimism, pride, attentiveness, joy/joviality, self-assurance, affection, contentment) and eight discrete negative emotions (anger/hostility, anxiety, fear, guilt, worry, envy, frustration, sadness) are examined in this meta-analysis.

Positive emotions in general are experienced when an individual perceives congruence with an affective event and personal goals (Frijda, 1993; Izard, 1991; Lazarus, 1991; Ortony et al., 1988). They are weaker in intensity when compared to negative emotions. However, they often aid in an individual's ability to adapt by offering a moment of reprieve from stress, facilitating coping, maintaining morale, and acting as a restorative mechanism; thereby buffering the negative consequences often associated

with the experience of negative emotions (Lazarus, 1991; Lazarus, Kanner, & Folkman, 1980; Lazarus & Folkman, 1984). I refer to Shaver, Schwartz, Kirson, & O'Connor's (1987) work on organizing emotion into five prototypes (spanning positive and negative emotion) to make distinctions between the discrete emotions.

In terms of positive emotion, Shaver and colleagues (1987) identify two prototypes – love and joy – to help categorize positive emotions in a meaningful way. Emotions that fall under the joy prototype are elicited from an affective event with a perceived positive outcome (i.e., goal congruence). The experience of these emotions motivates individuals to share these feelings of positivity, thereby engaging in approach behaviors with others (Lazarus, 1991; Ortony et al., 1988; Shaver et al., 1987).

The discrete emotion of joy (also used in conjunction with joviality per Watson & Clark, 1994) is considered a more intense reaction than other comparable emotions (e.g., happiness) and it is often associated with a more specific event (Lazarus, 1991). While the discrete emotion of happiness is less intense, it shares the behavioral tendencies mentioned above. Additionally, the discrete emotion of contentment is considered even more mild than happiness (i.e., lower arousal). Joy, happiness, and contentment are similar but represent varying degrees of intensity. The discrete emotion of pride is considered part of the joy prototype; however, it is a self-conscious, moral emotion and differs from the above discrete emotions based on the self-attribution for goal congruence (Lazarus, 1991; 1999; 2000; Ortony et al., 1988). The experience of pride is positively associated with confidence, self-esteem, and satisfaction, while also motivating action for achievement (Lazarus, 1991; Ortony et al., 1988; Weiss, Suckow, & Cropanzano, 1999).

The discrete emotions of hope and optimism are also considered a part of the joy prototype (Shaver et al., 1987); however, these emotions differ from the above descriptions of joy, happiness, and contentment. Hope is elicited when an individual is pleased about the prospect of a future event (Lazarus, 1991; Ortony et al., 1988). It differs from optimism in that the latter requires confidence that the future event will lead to a positive outcome (Lazarus, 1991; 2000). Both hope and optimism can motivate individuals to engage in constructive behaviors and mitigate distress over future events.

For Shaver and colleagues' (1987) love prototype, the discrete emotion of affection is examined in this paper. Affection can be elicited when a target individual provides something that is desired or liked, or if the target person expresses liking or appreciation towards the individual (Lazarus, 1991; Shaver et al., 1987). The experience of affection motivates individuals to exhibit warmth, interest, and/or concern to the target individual. Finally, attentiveness and self-assurance are examined as they are emotion scales used in the positive affect dimension conceptualized by Watson and colleagues (Watson & Clark, 1994; Watson et al., 1988). Attentiveness is described as being alert, concentrated, and determined, while self-assurance is described as feelings of strength, confidence, boldness, and fearlessness (Watson & Clark, 1994).

In contrast to positive emotions, negative emotions in general are experienced when an event produces an undesirable outcome that is incongruent with an individual's goals (Frijda, 1993; Izard, 1991; Lazarus, 1991; Ortony et al., 1988). According to Shaver and colleagues (1987), there are three prototypes for negative emotions – anger, fear, and sadness. I examine three discrete emotions within the anger prototype. First, the discrete emotion of anger (used in conjunction with hostility per Watson & Clark, 1994)

is a social emotion that is more commonly elicited in reaction to a person or event that can be appraised as unjust, unfair, or obstructive to the goals of the individual (Lazarus, 1991; Ortony et al., 1988). Anger motivates individual to engage in approach behaviors often targeted at the offender. However, anger also serves a social function by signaling that important needs are not being met (Gibson & Callister, 2010).

Similar to anger, the discrete emotion of frustration is elicited when goals are delayed or thwarted (Lazarus, 1991). Dollard–Miller's frustration-aggression theory (Dollard, Doob, Miller, Mowrer, & Sears, 1939) suggests that frustration can lead to aggressive behaviors; however, other emotion scholars have argued that frustration is the gateway for a variety of negative reactions including self-conscious perspectives such as guilt or shame (Lazarus, 1991). Also under the anger prototype (Shaver et al., 1987), the discrete emotion of envy demonstrates goal incongruence; however, it is elicited based on a target individual's successes (Lazarus, 1991; Parrot & Smith, 1993). The envious person engages in negative social comparison by either desiring the same success or wishing the target person was not successful. Envy can motivate individuals to seek out the object of envy with intentions of removing or destroying (Neu, 1980; Salovey, 1991).

For Shaver and colleagues' (1987) sadness prototype, the discrete emotion of sadness is elicited when an undesirable event has been realized. Sadness often motivates individuals to withdraw from their environment (Lazarus, 1991; Ortony et al., 1988; Shaver et al., 1987). Similar to sadness, the discrete emotion of guilt occurs after the undesirable event has occurred; however, guilt is considered a self-conscious, moral emotion. It is elicited when an individual identifies their behavior as violating personal or social standards (Baumeister, Stillwell, & Heatherton, 1994; Lazarus, 1991; Tangney,

Stuewig, & Mashek, 2007). Guilt can provide the motivation for a transgressor to alter their negative behaviors and enhance interpersonal functioning (Baumeister et al., 1994; Tangney, 1995).

In the fear prototype (Shaver et al, 1987), I examine fear, anxiety, and worry. Fear is elicited from an individual's appraisal of a threat with the potential to produce outcomes that are incongruent with the individual's goals (Frijda, 1986; Lazarus, 1991; Ortony et al., 1988). Additionally, the individual will assess the threat to determine if they have control over the outcomes. If a level of uncertainty exists, anxiety may arise when coping with the threat. Worry is distinguished from anxiety in that it is typically focused on more tangible, day to day concerns versus the overarching threat (Lazarus, 1991). Here, a typical action response is avoidance or escape (Frijda, 1986; Lazarus, 1991).

2.2. Positive versus Negative Emotions and Performance Behaviors

An accumulation of primary studies has demonstrated that positive emotions are more likely to drive more "positive" behaviors such as performance and OCBs (e.g., Barclay & Kiefer, 2014; De Cremer & Van Hiel, 2006; Lam, Walter, & Ouyang, 2014); while negative emotions are more likely to drive "negative" behaviors like CWBs (e.g., Chattopadhyay, Finn, Ashkanasy, 2010; Fox, Spector, & Miles, 2001; Spector et al. 2006). However, this trend is not as clear when considering specific discrete emotions. For example, Rispens & Demerouti (2016) conducted an experiential study assessing negative emotions in reaction to conflict at work and extra-role performance (i.e., OCBs). The researchers combined sadness and guilt to create a passive negative emotion variable for analysis and found it to be negatively related to extra-role performance. In contrast,

Johnson & Connelly (2014) assessed guilt reactions to failure feedback and found a positive relationship between guilt and positive social behaviors and performance, as well as a negative relationship with negative social behaviors at work. These studies illustrate that guilt as a discrete emotion can have asymmetrical effects (i.e., positive consequences) when examined on its own rather than as a component of overall negative emotion and/or affect.

It is important to note that the experience of emotion takes place in conjunction with affective constructs of longer duration (i.e., trait and state affect/mood); however, discrete emotions are unique in that they motivate individuals to action. Using the above example, the discrete emotion of guilt is more likely to motivate individuals to engage in corrective, helping behaviors when compared to negative emotions in general (even when guilt is used in the combination of emotions that comprise the negative emotion variable). As such, I expect that not only will discrete emotions relate to the behavioral outcomes/correlates in Box 3, Figure 1, but they will relate in differential patterns than their overall valence category. Note the term "correlates/outcomes" in Box 3, Figure 1 as many of the primary studies included in the meta-analytic review may not use a research design that allows for causal inferences from the model.

Additionally, discrete emotions originate at the intra-individual level as they can change from moment to moment throughout an individual's day (see Ashkanasy, 2003 for a review of the multi-level nature of affective constructs). The use of AET highlights specific work events that occur throughout the day and their role in eliciting differing emotional reactions within individuals (i.e., intra-individual level theory; Weiss & Cropanzano, 1996). However, emotions can also theoretically operate at the individual

and team levels of analysis (Ashkanasy, 2003; Elfenbein, 2007; Menges & Kilduff, 2015). Gully, Incalcaterra, Joshi, and Beaubien's (2002) meta-analysis on teams demonstrated that operationalizing constructs at differing levels of analysis can change some of the associated findings in a given domain. For example, they found that the relationship between team performance and team-efficacy and potency (combined) nearly doubled when operationalized at the team-level (rho = .39 versus rho = .20 at the individual-level). Further, efficacy and potency accounted for 15% of the variance in performance at the team-level, in contrast to 4% at the individual-level, thus providing initial support for the inclusion of level of analysis as an important component of meta-analytic reviews.

The emotions literature is also ripe for this analysis in that reported emotion-work associations may differ when operationalized at the intra-individual, individual, and team levels of analysis. While it has not been meta-analytically tested, several studies have examined intra- versus inter-individual variance in emotion and state affect (or mood). For example, Miner and colleagues (2005) examined event-mood-behavior relations in an empirical test of AET and found that 56% of the variance in mood was found at the intra-individual level versus inter-individual. Similarly, Fisher and Noble (2004) examined real-time emotion and performance events and found that emotion and performance varied more at the intra-individual level versus inter-individual. As such, I propose the following research question:

> *RQ1: What are the meta-analytic associations between discrete emotions and job performance, OCBs, and CWBs at the intra-individual, inter-individual, and team levels of analysis?*

2.3. Methodological Moderator

Box 2 of Figure 1 demonstrates a methodological moderator that may influence the emotion-work associations. Specifically, I am examining the event referents used in the emotion measures to prompt participant emotion recall. The use of this moderator aligns with the definition and components of emotion that differentiate it from trait affect and state affect (or mood). A defining component of discrete emotions is their bond with the preceding affective event; emotions are always in response to a particular person, event, and/or object (Fisher, 2000; 2002; Frijda, 1993; Gohm & Clore, 2002; Izard, 1991; Lazarus, 1991; Ortony et al., 1988). Despite this defining attribute, emotion measurement often excludes the use of an event referent to prompt emotion recall or uses event referents that range in specificity. The former type of measurement is not included in this meta-analysis as I assert that an event referent is needed to tap into the discrete emotions domain (versus trait and/or state affect/mood).

In terms of event referent specificity, many established measures of emotion in organizations use a general referent such as “on the job” or “at work” (e.g., PANAS: Watson et al. (1988); JAWS: Van Katwyk et al., 2000; JES: Fisher, 2000). However, this calls for participants to access a range of targets pertaining to their job/work that could elicit a variety of emotions at different intensities; i.e., participants create their own aggregate work emotion. In contrast, more specific event referents (e.g., a specific component of the job, target individuals such as a co-worker or supervisor) call for participants to narrow their thinking and focus on a particular target and their subsequent emotional reaction. I will examine how this range of specificity for event referents moderates emotion-performance associations.

RQ2: Does emotion measurement (i.e., specificity of event referent) moderate the emotion-correlates/outcomes associations?

CHAPTER 3: METHODS

Kepes, McDaniel, Brannick, and Banks' (2013) best practices were used as a guide for the literature search to find published studies relevant to discrete emotions and organizational behavior. Due to the previously mentioned definitional inconsistencies for discrete emotions, "emotion," "positive affect," and "negative affect" were used as specific search terms in the literature search to identify all relevant literature in the affect and emotions research domain. Additionally, "organization" was used as a search term in the article text to identify articles with a work context. Search date restrictions of 2000 – 2017 were used to align with the shift in focus to discrete emotion research in organizations (e.g., Barsade et al., 2003; Barsade & Gibson, 2007; Brief & Weiss, 2002; Briner & Kiefer, 2005; Gooty et al., 2009). These search terms were executed in PsycINFO and Business Source Complete yielding a total of 2,551 articles for the coding process.

The following inclusion criteria were used for studies to be included in the analyses. First, only studies that focused on working age populations were included. Second, studies had to include an affective construct that was measured according to the definition of discrete emotion. The primary criterion for emotion measurement was the use of an event referent. This criterion is crucial as studies that claim to assess discrete emotion but do not use appropriate measurement were not included in the meta-analysis. Additionally, studies that claim to assess affect or mood and measure it according to the definition of discrete emotion were included in the meta-analysis. The only exception to this rule was experiential studies that collected emotion data at multiple timepoints in the same day. These studies were included (even if there was no event referent in the emotion

measurement) because the dynamic nature of emotion is captured by the research design. Finally, studies had to provide a correlation between an emotion variable of interest and performance behaviors. After applying these inclusion criteria, 156 studies with 50,360 data points were included for analysis.

Five independent coders were used for this study. Each coder was trained before moving on to independently coding a subsample of studies for the meta-analysis. Cohen's kappa (Cohen, 1960) was used to calculate inter-rater reliability among the five coders across 210 coding decisions prior to the completion of training. According to Fleiss (1981), a Cohen's kappa of .75 or higher is considered excellent. Inter-rater reliabilities exceeded this mark of excellence for all coders (Cohen's kappa ranging from .83 to 1.00). Additionally, bi-weekly coding meetings were used to resolve any coding questions and I completed secondary checks of the primary data.

When organizing data for the primary meta-analysis, the emotion valence categories (i.e., positive and negative emotion) are comprised of data where researchers measured overall positive or negative emotion, as well as specific discrete emotions that fit the valence category (e.g., a study that measured the discrete emotion of happiness was included in the associations for both positive emotions and happiness). Additionally, some studies did not provide reliability estimates. In these instances, the average reliability estimate from the primary data was imputed for analysis. Also, composite correlations were created when the same sample provided multiple variables of interest for one association (e.g., emotion and OCB-I and OCB-O was computed into one composite correlation for an association with overall OCB). For job performance associations, self-report performance data were analyzed separately from more objective

indicators (e.g., supervisor report and objective performance metrics such as number of sales; henceforth called task performance). Notably, I did not analyze self-report data separately for OCBs or CWBs. For all coding and analysis decisions (e.g., coding changes by levels of analysis, proxy variables, etc.), please see Appendix A.

For the moderating analyses, data were organized in the following ways. Categories for event referent were created based on what was meaningful in the primary data. Here, I used "at work"/"on the job," specific referent (e.g., target individual, job task, etc.), implied referent (from preceding experimental manipulation/task or experiential event recall), and no event referent (only used for experiential studies that collected emotion data multiple times in a day). Moderating analyses could only be performed if the emotion-performance associations used at least 2 of the different types of event referents with $k \geq 2$ for each type (i.e., moderating analyses could not be run if the emotion-performance association had studies with all the same type of event referent or a specific type only had a k of 1).

To address RQ1, psychometric meta-analysis was used to analyze the primary samples (Schmidt & Hunter, 2015). To test for the potential of moderating variables, 80% credibility intervals are included. Credibility intervals with a wider range and/or those that include 0 signal that a moderating effect is present. I also include 95% confidence intervals. Schmidt and Hunter (2015) were also used for the categorical, methodological moderator analyses. When interpreting the results, Bosco, Aguinis, Singh, Field, and Pierce's (2015) correlational effect size benchmarks are used. They identify medium effect sizes involving behaviors as between roughly $|r| = .10$ and .25, with $|r| < .10$ demonstrating small effects and $|r| > .25$ demonstrating large effects.

CHAPTER 4: RESULTS

The following results section reviews the findings from the analyses. Tables 1-3 illustrate the meta-analytic associations between emotion and the performance behaviors. Each table looks at both positive and negative emotion (i.e., valence categories) and specific discrete emotions within these valence categories. Additionally, emotion-performance associations at different levels of analysis (e.g., intra-individual and team) are reported separately from the inter-individual associations. Note that all specific discrete emotion associations are at the inter-individual level (i.e., only the valence categories could be reported at the intra-individual and team levels). Table 4 illustrates the methodological moderator analyses and is organized and categorized in the same fashion as Tables 1-3.

4.1. Emotion and Job Performance

Table 1 provides the meta-analytic r associations between emotion and performance. For task performance (i.e., objective performance), negative emotion has a medium to large, negative association across all three levels (inter-individual: $\hat{\bar{\rho}} = -.16$, $k = 46$, $N = 7{,}246$; intra-individual: $\hat{\bar{\rho}} = -.21$, $k = 5$, $N = 6{,}210$; team: $\hat{\bar{\rho}} = -.40$, $k = 6$, $N = 575$). When parsing out the negative discrete emotions from the valence category, a different pattern of findings emerged. While anger and anxiety demonstrate similar effect sizes to negative emotions overall at the inter-individual level (anger: $\hat{\bar{\rho}} = -.15$, $k = 9$, $N = 1{,}720$; anxiety: $\hat{\bar{\rho}} = -.14$, $k = 10$, $N = 1{,}471$), fear has a much smaller association with task performance (fear: $\hat{\bar{\rho}} = -.04$, $k = 2$, $N = 335$). Moreover, the discrete emotions of guilt and worry actually demonstrate positive associations with task performance (guilt: $\hat{\bar{\rho}} = .11$, k

= 3, N = 450; worry: $\hat{\bar{\rho}}$ = .09, k = 2, N = 254). In sum, while a medium, negative association is demonstrated by negative emotions at the inter-individual level ($\hat{\bar{\rho}}$ = -.16), specific discrete emotions provide a range of associations from $\hat{\bar{\rho}}$ = -.15 (anger) to $\hat{\bar{\rho}}$ = .11 (guilt).

In terms of positive emotions, medium to large, positive associations were observed with task performance across levels of analysis (inter-individual: $\hat{\bar{\rho}}$ = .20, k = 30, N = 5,566; intra-individual: $\hat{\bar{\rho}}$ = .28, k = 5, N = 3,499; team: $\hat{\bar{\rho}}$ = .22, k = 4, N = 367). When parsing apart the positive discrete emotions, happiness demonstrates a larger effect size than the overall valence category (happiness: $\hat{\bar{\rho}}$ = .30, k = 3, N = 745), while the other discrete emotions have much smaller associations in terms of magnitude (hope: $\hat{\bar{\rho}}$ = .13, k = 3, N = 728; optimism: $\hat{\bar{\rho}}$ = .05, k = 2, N = 567; pride: : $\hat{\bar{\rho}}$ = .07, k = 4, N = 640). In sum, while a medium, positive association is demonstrated by positive emotions at the inter-individual level ($\hat{\bar{\rho}}$ = .20), specific discrete emotions provide a range of associations from $\hat{\bar{\rho}}$ = .05 (optimism) to $\hat{\bar{\rho}}$ = .30 (happiness).

Self-report performance associations demonstrated much higher effect sizes, almost doubling that of the task performance (i.e., objective performance) associations for both negative emotions (inter-individual: $\hat{\bar{\rho}}$ = -.32, k = 17, N = 4,583; intra-individual: $\hat{\bar{\rho}}$ = -.28, k = 7, N = 6,988) and positive emotions (inter-individual: $\hat{\bar{\rho}}$ = .39, k = 16, N = 5,536; intra-individual: $\hat{\bar{\rho}}$ = .43, k = 6, N = 6,678). For discrete emotions, only anxiety could be parsed apart from the negative valence category, and no positive discrete emotions. The association between anxiety and self-report performance was smaller

compared to negative emotions at the inter-individual level ($\hat{\rho}$ = -.21, k = 2, N = 334). In sum, perceived performance has stronger associations with emotion than objective task performance with both positive and negative emotions demonstrating large effect sizes.

4.2. Emotion and Organizational Citizenship Behavior

Table 2 provides the meta-analytic associations between emotion and OCB. OCB associations were analyzed with all OCB measures combined as well as OCB-individual and OCB-organization separately. For negative emotion, a medium, negative association was observed with both OCB and OCB-I at the inter-individual level (OCB: $\hat{\rho}$ = -.13, k = 32, N = 5,937; OCB-I: $\hat{\rho}$ = -.12, k = 21, N = 3,714), with a slightly larger effect size for OCBs targeted at the organization (OCB-O: $\hat{\rho}$ = -.23, k = 7, N = 1,384). The intra-individual association could be examined between negative emotions and OCB and the effect size reduced to almost zero ($\hat{\rho}$ = -.01, k = 4, N = 3,199).

More data were available for discrete emotion associations with OCB. Some discrete negative emotion associations with OCB and OCB-I demonstrated a similar pattern to the negative valency category (e.g., anxiety, envy, frustration; see Table 2 for meta-analytic findings). However, three discrete emotions stood out as quite different from the overall valence category. Anger/hostility doubled the effect size of negative emotions (OCB: $\hat{\rho}$ = -.30, k = 5, N = 1,266; OCB-I: $\hat{\rho}$ = -.24, k = 6, N = 1,159), while sadness demonstrated a much smaller association (OCB: $\hat{\rho}$ = -.05, k = 2, N = 494; OCB-I: $\hat{\rho}$ = -.03, k = 4, N = 707). Similar to the pattern demonstrated for performance, guilt had a large, positive association (OCB: $\hat{\rho}$ = .69, k = 2, N = 409; OCB-I: $\hat{\rho}$ = .64, k = 2, N = 409).

When examining the discrete negative emotions for OCBs targeted at the organization, anger/hostility, anxiety, and sadness demonstrated much smaller associations than the negative valence category ($\hat{\bar{\rho}}$ ranging -.03 to -.04), while envy demonstrated a small, positive association (OCB-O: $\hat{\bar{\rho}}$ = .03, k = 3, N = 558). In sum, negative emotions demonstrated medium, negative associations with all types of OCBs at the inter-individual level (overall: $\hat{\bar{\rho}}$ = -.13; OCB-I: $\hat{\bar{\rho}}$ = -.12; OCB-O: $\hat{\bar{\rho}}$ = -.23). However, specific discrete emotions provided a range of associations for overall OCB at $\hat{\bar{\rho}}$ = -.30 (anger) to $\hat{\bar{\rho}}$ = .69 (guilt), OCB-I at $\hat{\bar{\rho}}$ = -.24 (anger) to $\hat{\bar{\rho}}$ = .64 (guilt), and OCB-O at $\hat{\bar{\rho}}$ = -.04 (anger) to $\hat{\bar{\rho}}$ = .03 (envy).

For positive emotions, large, positive associations were observed with all types of OCB at the inter-individual level, with a slightly a stronger effect for OCBs targeted at the organization (OCB: $\hat{\bar{\rho}}$ = .39, k = 29, N = 6,182; OCB-I: $\hat{\bar{\rho}}$ = .39, k = 18, N = 3,290; OCB-O: $\hat{\bar{\rho}}$ = .48, k = 9, N = 2,222). Associations at the intra-individual and team level were observed for OCB (intra-individual: $\hat{\bar{\rho}}$ = .19, k = 3, N = 2,889; team: $\hat{\bar{\rho}}$ = .33, k = 2, N = 108). Discrete positive emotions were examined for all types of OCBs. In sum, while positive emotions demonstrated large, positive associations with all types of OCBs at the inter-individual level (overall: $\hat{\bar{\rho}}$ = .39; OCB-I: $\hat{\bar{\rho}}$ = .39; OCB-O: $\hat{\bar{\rho}}$ = .48), specific discrete emotions provided a range of associations for overall OCB at $\hat{\bar{\rho}}$ = .35 (self-assurance) to $\hat{\bar{\rho}}$ = .38 (joy and pride), OCB-I at $\hat{\bar{\rho}}$ = .26 (joy) to $\hat{\bar{\rho}}$ = .34 (affection), and OCB-O at $\hat{\bar{\rho}}$ = .29 (contentment and joy) to $\hat{\bar{\rho}}$ = .43 (pride).

4.3. Emotion and Counterproductive Work Behaviors

Table 3 illustrates the meta-analytic associations for emotion and CWBs. Similar to OCBs, CWB associations were analyzed with all CWB measures combined as well as CWB-individual and CWB-organization. Negative emotions demonstrated a large, positive association across all types of CWBs at the inter-individual level (CWB: $\hat{\bar{\rho}} = .42$, $k = 54$, $N = 14{,}757$; CWB-I: $\hat{\bar{\rho}} = .39$, $k = 37$, $N = 10{,}750$; CWB-O: $\hat{\bar{\rho}} = .38$, $k = 30$, $N = 8{,}920$). For CWB, the intra-individual and team levels were examined (intra-individual: $\hat{\bar{\rho}} = .33$, $k = 3$, $N = 2{,}129$; team: $\hat{\bar{\rho}} = .48$, $k = 2$, $N = 121$).

When examining the negative discrete emotion associations, frustration demonstrates the strongest association with CWBs of all types at the inter-individual level, exceeding the valence category for all three. The discrete emotion of fear demonstrated the smallest, positive association (CWB: $\hat{\bar{\rho}} = .24$, $k = 5$, $N = 762$; CWB-O: $\hat{\bar{\rho}} = .22$, $k = 4$, $N = 613$), with the exception of CWBs targeted at individuals where the effect size almost doubled (CWB-I: $\hat{\bar{\rho}} = .42$, $k = 2$, $N = 241$). Additionally, guilt demonstrated a similar pattern to previous performance behaviors (when it could be examined) as the association was negative. In sum, while negative emotions demonstrated large, positive associations with all types of CWBs at the inter-individual level (overall: $\hat{\bar{\rho}} = .42$; CWB-I: $\hat{\bar{\rho}} = .39$; CWB-O: $\hat{\bar{\rho}} = .38$), specific discrete emotions provided a range of associations for overall CWB at $\hat{\bar{\rho}} = -.26$ (guilt) to $\hat{\bar{\rho}} = .45$ (frustration), CWB-I at $\hat{\bar{\rho}} = .28$ (sadness) to $\hat{\bar{\rho}} = .52$ (frustration), and CWB-O at $\hat{\bar{\rho}} = -.21$ (guilt) to $\hat{\bar{\rho}} = .49$ (frustration).

For positive emotion, the associations vary based on the type of CWB. When examining CWB and CWB-O, medium, negative associations are observed (CWB: $\hat{\bar{\rho}}$ = -.18, k = 17, N = 3,647; CWB-O: $\hat{\bar{\rho}}$ = -.19, k = 7, N = 1,193). However, CWBs targeted at individuals demonstrate a smaller, negative association at the inter-individual level (CWB-I: $\hat{\bar{\rho}}$ = -.05, k = 8, N = 1,080), reducing even further at the intra-individual level (CWB-I: $\hat{\bar{\rho}}$ = -.02, k = 2, N = 1,370).

When parsing apart the positive discrete emotions, the majority of discrete emotions demonstrate a small, negative to small, positive association with CWBs, with the strongest effect sizes for CWB-O. Of note is the discrete emotion of attentiveness demonstrating the strongest association for CWB and CWB-O (CWB: $\hat{\bar{\rho}}$ = -.12, k = 2, N = 494; CWB-O: $\hat{\bar{\rho}}$ = -.20, k = 3, N = 558) and pride with CWB-O ($\hat{\bar{\rho}}$ = -.19, k = 3, N = 558). Again, the associations were much smaller and crossed over into positive when considering CWBs targeted at individuals. In sum, while positive emotions demonstrated small to medium, negative associations with all types of CWBs at the inter-individual level (overall: $\hat{\bar{\rho}}$ = -.18; CWB-I: $\hat{\bar{\rho}}$ = -.05; CWB-O: $\hat{\bar{\rho}}$ = -.19), specific discrete emotions provided a range of associations for overall CWB at $\hat{\bar{\rho}}$ = -.12 (attentiveness) to $\hat{\bar{\rho}}$ = .06 (contentment), CWB-I at $\hat{\bar{\rho}}$ = -.03 (attentiveness) to $\hat{\bar{\rho}}$ = .03 (affection), and CWB-O at $\hat{\bar{\rho}}$ = -.20 (attentiveness) to $\hat{\bar{\rho}}$ = -.06 (affection).

4.4. Measurement of Emotion

I looked at the event referent given to participants for recall of emotion (i.e., emotion measurement) as a methodological moderator. In terms of both task and self-

report performance, the majority of emotion associations (including negative and positive) demonstrated the strongest association when a specific referent was used in comparison to a more general "at work/on the job" event referent or an implied event referent. The only exception is with intra-individual positive emotion and task performance (specific: $\hat{\bar{\rho}} = .15$, $k = 2$, $N = 259$; job/work: $\hat{\bar{\rho}} = .33$, $k = 2$, $N = 1{,}370$). Notably, when looking at the discrete emotion of anger, an implied event referent flips the direction of the effect size (when compared to other negative emotions) into a small, positive association (specific: $\hat{\bar{\rho}} = -.22$, $k = 7$, $N = 1{,}297$; implied: $\hat{\bar{\rho}} = .07$, $k = 2$, $N = 423$).

Contrary to performance, an implied event referent demonstrates the strongest effect sizes for OCB associations (when it could be examined; i.e., $k \geq 2$ for implied event referent). For example, when considering all measures of OCB, negative emotion demonstrates the strongest association with OCB when the event referent is implied from an experimental scenario and/or experiential events (specific: $\hat{\bar{\rho}} = -.09$, $k = 10$, $N = 2{,}204$; job/work: $\hat{\bar{\rho}} = -.14$, $k = 16$, $N = 3{,}188$; implied: $\hat{\bar{\rho}} = -.36$, $k = 5$, $N = 474$). Anger – OCB (all measures and individual) studies did not have the data to use implied event referent as a moderator; rather these associations demonstrated the strongest effect sizes with specific event referents (e.g., OCB-I specific: $\hat{\bar{\rho}} = -.53$, $k = 2$, $N = 452$; job/work: $\hat{\bar{\rho}} = -.05$, $k = 4$, $N = 707$).

In terms of CWB with all measures and CWBs targeted at individuals, the majority of the associations demonstrate the strongest effect size when using a specific event referent. A notable exception to this pattern is with the discrete emotion of sadness. Sadness with all types of CWB (all measures, individual, and organization) demonstrates

a stronger association when the event referent is “on the job/at work” (CWB - specific: $\hat{\bar{\rho}}$ = .23, k = 2, N = 645; CWB - job/work: $\hat{\bar{\rho}}$ = .36, k = 3, N = 734; CWB-I - specific: $\hat{\bar{\rho}}$ = .21, k = 2, N = 645; CWB-I - job/work: $\hat{\bar{\rho}}$ = .33, k = 4, N = 798; CWB-O - specific: $\hat{\bar{\rho}}$ = .18, k = 2, N = 645; CWB-O - job/work: $\hat{\bar{\rho}}$ = .29, k = 4, N = 798). Further, when CWBs are targeted at the organization, the “on the job/at work” event referent leads to stronger effect sizes for the majority of associations (with the exception of positive emotions).

CHAPTER 5: DISCUSSION

It has been almost two decades since the original calls for more research using discrete emotions (e.g., Barsade et al., 2003; Barsade & Gibson, 2007; Briner & Kiefer, 2005; Gooty et al., 2009). However, no comprehensive, empirical review has addressed the question of whether discrete emotions do indeed matter for organizations. The findings from this meta-analysis demonstrate that, yes, discrete emotions do matter for performance behaviors. This study provides key insights in the emotions domain based on these findings.

In terms of RQ1, not only does the experience of emotion relate to performance behaviors, but there is also importance in parsing apart discrete emotions from their overall valence categories when considering these associations. Negative and positive emotions demonstrated a range of associations with all three performance behaviors, with the smallest magnitude association for positive emotions and CWB-I ($\hat{\bar{\rho}}$ = -.05) to the largest association for positive emotions and OCB-O ($\hat{\bar{\rho}}$ = .48). However, the inclusion of specific discrete emotions uncovered nuanced findings of these associations. For example, a medium, negative association was observed for negative emotions and OCB (all measures: $\hat{\bar{\rho}}$ = -.13); however, when breaking this down into six discrete emotions, we see a range of $\hat{\bar{\rho}}$ = -.30 (anger) to .69 (guilt) for OCB associations.

The above example is representative of all three performance behaviors. When examining discrete emotions, the associations often differed from the valence category associations and sometimes changed direction. Clearly, the behavioral and motivational tendencies behind specific discrete emotions create very different relationships with

performance behaviors despite the fact that they can share a common valence. Lumping them together into one negative or positive emotion variable obstructs the unique behavioral tendencies of these emotions and ultimately prevents researchers from understanding how the experience of specific discrete emotions operates in the workplace.

Also in line with RQ1, the associations between emotion and performance behaviors differ by level of analysis. However, it is not necessarily strongest at the intra-individual level as previously theorized (based on alignment with the theoretical origin of emotion), nor is there a clear pattern in these findings. For example, positive emotions and task performance demonstrated the strongest association at the intra-individual level ($\hat{\bar{\rho}}$ = .28), while the association between positive emotion and CWB ($\hat{\bar{\rho}}$ = -.02) and negative emotion and OCB ($\hat{\bar{\rho}}$ = -.01) dropped to near zero when considering the intra-individual level. Additionally, the majority of associations for negative emotions were strongest at the team-level.

While there is no clear pattern in the associations at different levels of analysis, it is clear that the association changes as it traverses levels and in different directions depending on the emotion-work association. For example, the association between negative emotions and CWB (all measures) gets stronger as it traverses levels (intra-individual: $\hat{\bar{\rho}}$ = .33; individual: $\hat{\bar{\rho}}$ = .42; team: $\hat{\bar{\rho}}$ = .48), whereas the association between negative emotions and task performance reduces in magnitude from the intra- to inter-individual levels but doubles at the team level (intra-individual: $\hat{\bar{\rho}}$ = -.21; individual: $\hat{\bar{\rho}}$ = -

.16; team: $\hat{\bar{\rho}}$ = -.40). The emergence processes from the intra-individual to the team level change depending on the emotion and the performance behavior that is studied.

For RQ2, we see that emotion-performance associations are moderated by emotion measurement. The majority of performance and CWB associations were stronger with a specific event referent. For example, the overall meta-analytic association between positive emotions and task performance was $\hat{\bar{\rho}}$ = .20 compared to the use of a specific event referent at $\hat{\bar{\rho}}$ = .26. For OCBs, implied event referents demonstrated the strongest effects; however, these are also appropriately used as the emotion is tied to the preceding experimental task/manipulation and/or experiential event.

Limitations and future directions

I now discuss the limitations that were inherent to this meta-analysis and the resulting recommendations for future research directions. First, different scales were used to measure emotion in the meta-analysis. Some established measures were used (e.g., PANAS: Watson et al. (1988); JAWS: Van Katwyk et al., 2000; JES: Fisher, 2000); however, these measures were often adapted and researchers would choose different sets of emotion items than what was originally published for the measure. Additionally, some studies did not use established measures and simply asked participants to recall the emotion(s) of interest. As such, negative or positive emotion assessed in this meta-analysis could be different combinations of discrete emotions (e.g., negative emotion is measured as frustration/anger in one study and guilt/sadness/anger/fear in the next study). Despite this challenge, there are benefits to using multiple scales in a meta-analysis as it allows for triangulation.

Second, it is important to note that meta-analytic associations based on smaller *k*s offer less robust findings. The majority of associations with small *k*s in our meta-analysis were found in specific discrete emotions and associations at levels of analysis other than the inter-individual level (with some as low as two studies). In order to examine the stability of the meta-analytic findings reported here, more empirical research with a focus on specific discrete emotions is needed. Additionally, attention to levels of analysis should be incorporated in emotion studies at both the intra-individual and team levels through the use of experience sampling methodology or repeated measures. Interestingly, our data did not allow for the examination of specific discrete emotion associations at the intra-individual and team levels of analysis. As such, a multi-level focus on specific discrete emotions is necessary for future research.

Third, this meta-analysis treats emotion as if the experience of one emotion occurs in isolation from another. According to Scherer & Tannenbaum (1986), the everyday lives of most individuals are characterized by emotional reactions that include a mixture of discrete emotions simultaneously. This will likely have differing effects on performance behaviors. For example, Fong (2006) conducted a lab study on emotional ambivalence (i.e., the simultaneous experience of opposing emotions) using happiness and sadness and their influence on creative performance. She found that the co-occurrence of happiness and sadness increased creative performance, while the experience of happiness and sadness alone did not demonstrate a significant effect. More research is needed on the simultaneous experience of different discrete emotions and the resulting motivational and behavioral tendencies.

Finally, context and individual differences were not a focus of this meta-analysis. However, both the context of a situation and/or individual differences will moderate the association between the preceding affective event and an individual's experience of emotion, as well as the influence of emotion on performance behaviors. For example, Chi, Tsai, & Tseng (2013) found that customer service employees high on neuroticism were more likely to react to customer negative events with increased hostility, which subsequently influenced their engagement in service sabotage behaviors. Future meta-analytic studies should consider the influence of such moderating variables when examining performance behaviors.

Future research directions for theory development

1. Emotion scholars that called for a focus on discrete emotions were correct in that they differ from the broader valence categories. Researchers that claim to be interested in discrete emotions should treat the construct as such and consider the unique appraisal patterns as well as behavioral and motivational tendencies of each discrete when incorporating it into a theoretical model. The aggregate of these patterns/tendencies by valence is not as theoretically meaningful in terms of discrete emotions (note that this requires researchers to understand and use appropriate terminology for affect, mood, and emotion).
2. The popular theoretical models used in discrete emotion research are not emotion specific; rather they provide the framework for the process of any emotion experience in the workplace and researchers fill in the blanks depending on their discrete emotion of choice (e.g., EASI, CAT, AET). As we accumulate more research on specific discrete emotions, the field can shift to a focus on theoretical models specific

to a certain emotion. For example, Geddes & Callister (2007) introduced the dual threshold model for the discrete emotion of anger and its appropriateness in the workplace. However, this theory places the emphasis on expressed anger; there is a paucity of theory on experienced discrete emotions. More theoretical work with a focus on specific discrete emotions and how they operate among employees in organizations is needed.

3. Finally, the level of analysis must be considered in all theoretical work on discrete emotion. Emotion itself is an intra-individual phenomenon fluctuating throughout an individual's day (Ashkanasy, 2003; Weiss & Cropanzano, 1996). However, we see that the magnitude of emotion-performance associations changes by level of analysis. Therefore, researchers must theoretically explain the emergence processes of emotion as it traverses levels and how this can influence relationships of interest.

Future research directions for measurement and design

1. Researchers must align theory with measurement of emotion variables. Researchers commonly cite the predominant theoretical frameworks and definition for emotion, but their measurement reflects that of trait and/or state affect (or mood). Similarly, researchers also claim to be interested in trait and/or state affect in theory, but use measurement aligned with emotion. These misalignments are identified based on the measurement including an event referent; trait and state affect (or mood) are not tied to an event (e.g., Chi, Tsai, & Tseng, 2013: claimed to be interested in mood but measured mood with an event referent).

2. Additionally, researchers should align theory with measurement and research design in terms of levels of analysis. The predominant theoretical models for emotion are at the intra-individual level; therefore, if researchers design a study and measure emotion at the individual or team level, the theoretical background should reflect this (i.e., comment on the emergence processes of emotion across levels).
3. Appropriate emotion measurement should align with the definition of emotion. In terms of this meta-analysis, we identified the event referent as important and demonstrated that associations change based on the researcher's choice of measurement. In alignment with the definition of emotion, emotion measurement should have a specific event referent from which the emotion was experienced.

Conclusion

This review answers timely questions regarding the current state of the science in discrete emotions and performance behaviors through meta-analytic techniques. First, I addressed the challenge of definitional inconsistencies and the importance of examining specific discrete emotions. Second, levels of analysis are differentiated to provide an illustration of multi-level emotion associations. Finally, a key component of emotion measurement is identified based on the theoretical definition of emotion (i.e., event referent) and serves as a methodological moderator in the emotion-performance associations. As a result of these findings, recommendations are made for the future of discrete emotion research.

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FOOTNOTES

[1] The Shockley and colleagues (2012) meta-analysis purports to assess the relationship between discrete emotions and performance; however, their criteria for inclusion in the meta-analysis mirrored the definition of state affect rather than emotion thus creating the types of definitional misalignment noted earlier. As such, their review excludes studies that focus on discrete emotion, while only including studies with state affect or mood for analysis.

[2] References marked with an asterisk indicate studies included in the meta-analysis.

Table 1. ***Emotion and job performance***

Variable	*k*	*N*	$\bar{r}$	SD_r	$\hat{\bar{\rho}}$	SD_ρ	CV_{LL}	CV_{UL}	CI_{LL}	CI_{UL}	%Var
Task performance											
Negative emotions	46	7,246	-.15	.17	-.16	.19	-.38	.06	-.22	-.11	20%
Intra-individual	5	6,210	-.19	.09	-.21	.09	-.31	-.10	-.29	-.13	11%
Team	6	575	-.31	.18	-.40	.19	-.59	-.22	-.54	-.27	40%
Anger	9	1,720	-.13	.19	-.15	.21	-.40	.10	-.29	-.01	15%
Anxiety	10	1,471	-.12	.16	-.14	.18	-.33	.06	-.24	-.03	27%
Fear	2	335	-.03	.07	-.04	.08	-.04	-.04	-.14	.07	99%
Guilt	3	450	.09	.11	.11	.13	.01	.22	-.02	.25	59%
Worry	2	254	.07	.02	.09	.03	.09	.09	-.04	.21	99%
Positive emotions	30	5,566	.18	.18	.20	.21	-.05	.45	.12	.27	15%
Intra-individual	5	3,499	.26	.07	.28	.07	.20	.36	.22	.34	27%
Team	4	367	.15	.11	.22	.13	.22	.22	.12	.32	99%
Happiness	3	745	.25	.08	.30	.09	.22	.37	.20	.39	59%
Hope	3	728	.11	.09	.13	.10	.04	.21	.02	.23	55%
Optimism	2	567	.04	.02	.05	.02	.05	.05	-.03	.13	99%
Pride	4	640	.06	.07	.07	.07	.07	.07	-.01	.14	99%
Self-report performance											
Negative emotions	17	4,583	-.28	.19	-.32	.25	-.62	-.01	-.43	-.20	8%
Intra-individual	7	6,988	-.25	.24	-.28	.27	-.62	.07	-.48	-.07	1%
Anxiety	2	334	-.19	.06	-.21	.05	-.21	-.21	-.31	-.11	99%
Positive emotions	16	5,536	.34	.13	.39	.17	.19	.59	.31	.47	11%
Intra-individual	6	6,678	.40	.11	.43	.12	.28	.58	.33	.52	5%

Note. *k* = number of independent samples; *N* = total sample size; $\bar{r}$ = sample-size weighted mean observed correlation; SD_r= sample-size-weighted observed standard deviation of correlations; $\hat{\bar{\rho}}$ = mean true-score correlation (corrected for unreliability for both variables); SD_ρ= standard deviation of corrected correlations; CV_{LL} and CV_{UL} = lower and upper bounds, respectively, of the 80% credibility interval; CI_{LL} and CI_{UL} = lower and upper bounds, respectively, of the 95% confidence interval around the mean true-score correlation; %Var = percentage of variance attributable to statistical artifacts.

Table 2. ***Emotion and organizational citizenship behaviors***

Variable	*k*	*N*	$\bar{r}$	SD_r	$\hat{\bar{\rho}}$	SD_ρ	CV_{LL}	CV_{UL}	CI_{LL}	CI_{UL}	%Var
Organizational citizenship behaviors											
Negative emotions	32	5,937	-.11	.19	-.13	.23	-.40	.14	-.21	-.05	14%
Intra-individual	4	3,199	-.01	.01	-.01	.01	-.01	-.01	-.05	.02	99%
Anger/Hostility	5	1,266	-.26	.20	-.30	.23	-.59	-.02	-.51	-.10	9%
Anxiety	3	857	-.10	.07	-.12	.09	-.19	-.05	-.21	-.03	63%
Envy	2	537	-.07	.13	-.08	.16	-.27	.10	-.30	.13	21%
Frustration	2	737	-.09	.07	-.12	.09	-.19	-.05	-.22	-.01	59%
Guilt	2	409	.50	.39	.69	.47	.09	.99	.03	.99	2%
Sadness	2	494	-.04	.02	-.05	.03	-.05	-.05	-.14	.04	99%
Positive emotions	29	6,182	.34	.16	.39	.18	.18	.61	.33	.46	15%
Intra-individual	3	2,889	.17	.07	.19	.07	.11	.27	.11	.27	25%
Team	2	108	.30	.06	.33	.08	.33	.33	.16	.51	99%
Attentiveness	2	494	.29	.08	.37	.08	.34	.40	.28	.46	92%
Joy	2	494	.33	.05	.38	.03	.38	.38	.31	.46	99%
Pride	3	486	.33	.05	.38	.06	.38	.38	.30	.46	99%
Self-assurance	2	309	.28	.03	.35	.01	.35	.35	.24	.45	99%
Organizational citizenship behaviors - individual											
Negative emotions	21	3,714	-.11	.18	-.12	.21	-.36	.11	-.21	-.04	18%
Anger/Hostility	6	1,159	-.21	.23	-.24	.26	-.56	.07	-.45	-.04	9%
Anxiety	4	750	-.07	.06	-.08	.07	-.08	-.08	-.15	-.01	99%
Envy	4	750	-.07	.12	-.08	.14	-.23	.06	-.21	.05	37%
Guilt	2	409	.51	.39	.64	.49	.02	.99	-.03	.99	2%
Sadness	4	707	-.03	.06	-.03	.08	-.03	-.03	-.11	.04	99%
Positive emotions	18	3,290	.35	.18	.39	.21	.14	.64	.30	.49	13%
Affection	3	558	.31	.06	.34	.07	.34	.34	.26	.41	99%
Attentiveness	4	707	.23	.06	.28	.07	.28	.28	.21	.35	99%
Contentment	3	558	.26	.05	.27	.06	.27	.27	.20	.35	99%
Joy/Joviality	4	707	.23	.10	.26	.10	.17	.34	.16	.35	60%
Pride	5	699	.25	.09	.30	.10	.27	.33	.23	.37	93%
Self-assurance	2	309	.23	.04	.27	.02	.27	.27	.16	.37	99%
Organizational citizenship behaviors - organization											
Negative emotions	7	1,384	-.20	.08	-.23	.09	-.28	-.18	-.29	-.17	79%
Anger/Hostility	4	707	-.03	.04	-.04	.05	-.04	-.04	-.11	.03	99%
Anxiety	3	558	-.02	.05	-.03	.06	-.03	-.03	-.11	.06	99%
Envy	3	558	.03	.06	.03	.06	.03	.03	-.05	.12	99%
Sadness	4	707	-.03	.06	-.04	.07	-.04	-.04	-.11	.04	99%
Positive emotions	9	2,222	.42	.18	.48	.22	.21	.75	.33	.62	8%
Affection	3	558	.32	.06	.34	.07	.34	.34	.27	.42	99%

Table 2. ***Emotion and organizational citizenship behaviors (continued)***

Variable	*k*	*N*	$\bar{r}$	SD_r	$\hat{\bar{\rho}}$	SD_ρ	CV_{LL}	CV_{UL}	CI_{LL}	CI_{UL}	%Var
Attentiveness	4	707	.28	.09	.34	.12	.24	.44	.23	.44	53%
Contentment	3	558	.27	.07	.29	.07	.29	.29	.21	.37	99%
Joy/Joviality	4	707	.26	.12	.29	.13	.16	.42	.17	.41	37%
Pride	4	628	.36	.16	.43	.19	.21	.65	.24	.61	19%
Self-assurance	2	309	.28	.05	.32	.04	.32	.32	.22	.42	99%

Note. *k* = number of independent samples; *N* = total sample size; $\bar{r}$ = sample-size weighted mean observed correlation; SD_r= sample-size-weighted observed standard deviation of correlations; $\hat{\bar{\rho}}$ = mean true-score correlation (corrected for unreliability for both variables); SD_ρ= standard deviation of corrected correlations; CV_{LL} and CV_{UL} = lower and upper bounds, respectively, of the 80% credibility interval; CI_{LL} and CI_{UL} = lower and upper bounds, respectively, of the 95% confidence interval around the mean true-score correlation; %Var = percentage of variance attributable to statistical artifacts.

Table 3. ***Emotion and counterproductive work behaviors***

Variable	*k*	*N*	$\bar{r}$	SD_r	$\hat{\bar{\rho}}$	SD_ρ	CV_{LL}	CV_{UL}	CI_{LL}	CI_{UL}	%Var
Counterproductive work behaviors											
Negative emotions	54	14,757	.35	.14	.42	.15	.25	.59	.38	.46	18%
Intra-individual	3	2,129	.30	.13	.33	.15	.14	.52	.16	.50	6%
Team	2	121	.37	.05	.48	.22	.28	.67	.22	.73	53%
Anger/Hostility	21	4,747	.36	.15	.42	.17	.23	.62	.35	.49	16%
Anxiety	7	1,785	.33	.18	.37	.19	.14	.61	.23	.51	11%
Envy	7	1,443	.33	.09	.38	.11	.28	.48	.31	.46	48%
Fear	5	762	.21	.16	.24	.18	.04	.45	.09	.40	24%
Frustration	4	2,226	.37	.12	.45	.15	.27	.63	.31	.59	9%
Guilt	4	646	-.21	.16	-.26	.21	-.51	-.02	-.46	-.06	21%
Sadness	5	1,379	.24	.10	.30	.12	.18	.43	.20	.40	34%
Positive emotions	17	3,647	-.15	.11	-.18	.13	-.31	-.04	-.24	-.12	37%
Intra-individual	2	1,370	-.01	.15	-.02	.17	-.22	.19	-.24	.21	6%
Attentiveness	2	494	-.10	.01	-.12	.01	-.12	-.12	-.21	-.03	99%
Contentment	2	566	.05	.01	.06	.02	.06	.06	-.02	.14	99%
Joy	2	494	-.02	.10	-.03	.11	-.13	.08	-.17	.12	44%
Counterproductive work behaviors - individual											
Negative emotions	37	10,750	.35	.13	.39	.18	.18	.61	.34	.45	12%
Anger/Hostility	15	3,314	.39	.16	.45	.17	.25	.66	.36	.54	14%
Anxiety	7	1,604	.32	.19	.36	.19	.13	.60	.22	.51	12%
Envy	8	1,498	.30	.12	.35	.15	.20	.51	.26	.45	30%
Fear	2	241	.38	.01	.42	.01	.42	.42	.31	.52	99%
Frustration	3	1,623	.42	.05	.52	.08	.43	.61	.43	.61	27%
Sadness	6	1,443	.22	.11	.28	.14	.13	.42	.18	.38	31%
Positive emotions	8	1,080	-.04	.08	-.05	.09	-.05	-.05	-.11	.01	99%
Affection	3	558	.02	.12	.03	.14	-.11	.17	-.12	.18	36%
Attentiveness	3	558	-.05	.09	-.05	.10	-.13	.03	-.16	.06	65%
Contentment	4	779	.00	.12	.01	.15	-.14	.16	-.12	.14	36%
Joy	3	558	-.03	.16	-.02	.18	-.23	.19	-.23	.18	20%
Pride	3	558	.00	.10	.01	.12	-.10	.11	-.12	.13	51%
Counterproductive work behaviors - organization											
Negative emotions	30	8,920	.32	.12	.38	.14	.23	.53	.33	.43	21%
Anger	11	2,363	.23	.11	.28	.13	.15	.42	.21	.36	36%
Anxiety	5	872	.24	.13	.29	.16	.13	.46	.16	.42	32%
Envy	5	956	.23	.07	.28	.09	.25	.31	.22	.35	93%
Fear	4	613	.19	.13	.22	.15	.07	.38	.08	.36	36%
Frustration	2	1,116	.43	.06	.49	.07	.43	.56	.41	.58	36%
Guilt	2	237	-.19	.03	-.21	.04	-.21	-.21	-.34	-.09	99%
Sadness	6	1,443	.18	.08	.24	.10	.16	.32	.17	.31	61%

Table 3. ***Emotion and counterproductive work behaviors (continued)***

Variable	*k*	*N*	$\bar{r}$	SD_r	$\hat{\bar{\rho}}$	SD_ρ	CV_{LL}	CV_{UL}	CI_{LL}	CI_{UL}	%Var
Positive emotions	7	1,193	-.16	.14	-.19	.16	-.37	-.01	-.30	-.07	27%
Intra-individual	2	1,370	-.01	.15	-.02	.17	-.22	.19	-.24	.21	6%
Affection	3	558	-.05	.06	-.06	.07	-.06	-.06	-.14	.03	99%
Attentiveness	3	558	-.19	.09	-.20	.10	-.29	-.12	-.31	-.09	58%
Contentment	3	558	-.06	.12	-.07	.14	-.21	.08	-.22	.09	34%
Joy	3	558	-.12	.15	-.12	.16	-.31	.06	-.30	.06	24%
Pride	3	558	-.18	.08	-.19	.09	-.24	-.15	-.28	-.11	85%

Note. *k* = number of independent samples; *N* = total sample size; $\bar{r}$ = sample-size weighted mean observed correlation; SD_r= sample-size-weighted observed standard deviation of correlations; $\hat{\bar{\rho}}$ = mean true-score correlation (corrected for unreliability for both variables); SD_ρ= standard deviation of corrected correlations; CV_{LL} and CV_{UL} = lower and upper bounds, respectively, of the 80% credibility interval; CI_{LL} and CI_{UL} = lower and upper bounds, respectively, of the 95% confidence interval around the mean true-score correlation; %Var = percentage of variance attributable to statistical artifacts.

Table 4. ***Methodological moderator***

Event Referent	*k*	*N*	$\bar{r}$	SD_r	$\hat{\bar{\rho}}$	SD_ρ	CV_{LL}	CV_{UL}	CI_{LL}	CI_{UL}	%Var
Task performance											
Negative emotions											
Job/work	9	1,225	-.14	.11	-.16	.13	-.26	-.05	-.23	-.08	59%
Specific	28	4,987	-.16	.17	-.18	.19	-.39	.03	-.25	-.11	19%
Implied	9	1,034	-.08	.24	-.09	.26	-.40	.21	-.26	.07	15%
Intra-individual											
Job/work	2	1,370	-.12	.09	-.13	.11	-.26	-.01	-.28	.01	15%
Specific	2	2,970	-.26	.05	-.27	.05	-.32	-.22	-.34	-.21	28%
Anger											
Specific	7	1,297	-.19	.17	-.22	.19	-.44	.00	-.36	-.09	19%
Implied	2	423	.06	.09	.07	.09	.00	.14	-.05	.19	66%
Positive emotions											
Job/work	12	2,312	.16	.19	.17	.22	-.09	.43	.05	.29	13%
Specific	13	2,532	.23	.17	.26	.19	.04	.48	.16	.36	17%
Implied	5	722	.05	.16	.05	.18	-.14	.24	-.10	.20	28%
Intra-individual											
Job/work	2	1,370	.32	.06	.33	.06	.27	.40	.25	.42	34%
Specific	2	259	.14	.11	.15	.12	.05	.24	-.01	.31	59%
Self-report performance											
Negative emotions											
Job/work	9	1,979	-.19	.08	-.22	.10	-.30	-.14	-.28	-.16	61%
Specific	6	2,240	-.38	.22	-.44	.29	-.81	-.07	-.67	-.21	3%
Intra-individual											
Job/work	4	5,152	-.34	.16	-.38	.18	-.60	-.15	-.55	-.21	2%
Specific	2	771	-.20	.28	-.23	.31	-.62	.16	-.66	.20	3%
Positive emotions											
Job/work	10	3,370	.32	.09	.36	.11	.25	.48	.30	.43	28%
Specific	4	1,802	.38	.18	.45	.24	.15	.75	.21	.68	4%
Intra-individual											
Job/work	4	5,152	.43	.07	.46	.09	.35	.57	.38	.55	8%
None	2	1,526	.29	.12	.31	.13	.15	.46	.13	.48	8%
Organizational citizenship behaviors											
Negative emotions											
Job/work	16	3,188	-.12	.18	-.14	.22	-.40	.12	-.25	-.04	15%
Specific	10	2,204	-.07	.15	-.09	.17	-.28	.10	-.19	.01	22%
Implied	5	474	-.31	.27	-.36	.33	-.76	.04	-.65	-.07	11%
None	12	2,333	-.10	.14	-.13	.16	-.31	.04	-.22	-.05	29%
Anger											
Work/job	3	814	-.14	.10	-.16	.13	-.30	-.02	-.30	-.02	31%
Specific	2	452	-.48	.13	-.53	.17	-.73	-.33	-.76	-.30	12%

Table 4. ***Methodological moderator (continued)***

Event Referent	*k*	*N*	$\bar{r}$	SD_r	$\hat{\bar{\rho}}$	SD_ρ	CV_{LL}	CV_{UL}	CI_{LL}	CI_{UL}	%Var
Positive emotions											
Job/work	15	3,647	.29	.11	.33	.13	.19	.47	.27	.40	29%
Specific	10	2,132	.41	.16	.45	.19	.22	.68	.33	.57	11%
Implied	2	252	.61	.02	.73	.03	.73	.73	.65	.81	99%
None	2	151	.35	.27	.41	.31	.04	.78	-.01	.83	15%
Organizational citizenship behaviors - individual											
Negative emotions											
Job/work	8	1,823	-.08	.12	-.09	.15	-.25	.07	-.19	.00	28%
Specific	8	1,417	-.08	.15	-.09	.16	-.27	.09	-.20	.02	27%
Implied	5	474	-.31	.27	-.35	.33	-.75	.05	-.64	-.07	11%
None	7	1,319	-.14	.09	-.17	.10	-.22	-.12	-.23	-.11	80%
Anger											
Work/job	4	707	-.05	.03	-.05	.03	-.05	-.05	-.13	.02	99%
Specific	2	452	-.48	.13	-.53	.17	-.73	-.33	-.76	-.30	12%
Positive emotions											
Job/work	6	933	.23	.06	.26	.06	.26	.26	.20	.32	99%
Specific	9	1,804	.39	.19	.43	.22	.16	.70	.29	.57	10%
Implied	2	252	.61	.02	.73	.03	.73	.73	.65	.81	99%
Organizational citizenship behaviors - organization											
Negative emotions											
Job/work	5	873	-.20	.10	-.23	.11	-.33	-.14	-.32	-.14	57%
Specific	2	511	-.20	.01	-.23	.01	-.23	-.23	-.31	-.15	99%
Counterproductive work behaviors											
Negative emotions											
Job/work	24	8,445	.34	.12	.42	.14	.25	.58	.36	.47	17%
Specific	28	6,139	.37	.15	.43	.16	.24	.61	.37	.48	18%
Implied	2	173	.26	.07	.31	.10	.31	.31	.17	.45	99%
Anger											
Work/job	5	1,311	.34	.17	.40	.19	.17	.64	.24	.60	11%
Specific	16	3,436	.37	.14	.43	.15	.25	.61	.36	.50	20%
Anxiety											
Job/work	4	979	.24	.15	.28	.18	.07	.49	.11	.46	16%
Specific	3	806	.43	.16	.46	.17	.26	.66	.27	.65	10%
Envy											
Job/work	2	585	.34	.06	.40	.08	.33	.47	.29	.51	53%
Specific	5	858	.31	.10	.37	.12	.26	.48	.27	.47	48%
Frustration											
Job/work	2	1,110	.29	.06	.37	.07	.31	.43	.29	.45	55%
Specific	2	1,116	.44	.12	.52	.16	.32	.72	.29	.74	6%
Sadness											

Table 4. ***Methodological moderator (continued)***

Event Referent	*k*	*N*	$\bar{r}$	SD_r	$\hat{\bar{\rho}}$	SD_ρ	CV_{LL}	CV_{UL}	CI_{LL}	CI_{UL}	%Var
Job/work	3	734	.30	.11	.36	.14	.21	.51	.21	.51	27%
Specific	2	645	.18	.02	.23	.02	.23	.23	.16	.31	99%
Positive emotions											
Job/work	10	2,833	-.15	.08	-.17	.10	-.26	-.07	-.23	-.11	46%
Specific	7	814	-.17	.17	-.21	.21	-.43	.01	-.36	-.06	30%
Counterproductive work behaviors - individual											
Negative emotions											
Job/work	12	5,618	.31	.12	.35	.14	.17	.52	.27	.43	11%
Specific	25	5,132	.39	.13	.45	.20	.22	.69	.38	.53	13%
Anger											
Work/job	4	798	.32	.20	.38	.23	.10	.66	.16	.61	11%
Specific	11	2,516	.41	.13	.47	.14	.30	.64	.39	.55	18%
Anxiety											
Job/work	4	798	.20	.13	.24	.16	.07	.42	.09	.39	26%
Specific	3	806	.43	.16	.46	.17	.26	.67	.27	.65	10%
Envy											
Job/work	4	798	.28	.13	.34	.16	.16	.51	.19	.48	25%
Specific	4	700	.32	.11	.37	.13	.24	.50	.25	.49	38%
Sadness											
Job/work	4	798	.27	.13	.33	.16	.16	.51	.19	.48	27%
Specific	2	645	.17	.04	.21	.04	.21	.21	.14	.29	99%
Positive emotions											
Job/work	3	715	-.06	.03	-.06	.03	-.06	-.06	-.13	.01	99%
Specific	5	365	-.01	.12	-.01	.14	-.01	-.01	-.12	.09	99%
Counterproductive work behaviors - organization											
Negative emotions											
Job/work	17	5,645	.34	.10	.40	.12	.27	.52	.34	.45	25%
Specific	12	3,167	.30	.13	.35	.16	.16	.54	.26	.44	17%
Anger											
Job/work	4	798	.25	.12	.31	.15	.15.	.46	.17	.44	31%
Specific	7	1,565	.22	.10	.27	.13	.15	.39	.19	.36	41%
Sadness											
Job/work	4	798	.22	.09	.29	.11	.20	.37	.19	.38	61%
Specific	2	645	.14	.03	.18	.05	.18	.18	.10	.25	99%
Positive emotions											
Job/work	4	640	-.11	.11	-.11	.12	-.22	-.01	-.22	-.01	54%
Specific	3	553	-.23	.15	-.29	.17	-.48	-.10	-.47	-.11	26%

Note. Four categories of event referents can be used for any given association (must have $k > 2$ for each subgrouping): "at work/on the job," specific referents (e.g., target individual, job task, etc.), implied referent (from preceding experimental manipulation/task or experiential event recall), and no event referent (only used for studies that capture emotion multiple times per day). *k* = number of independent samples; *N*

= total sample size; $\bar{r}$ = sample-size-weighted mean observed correlation; SD_r= sample-size-weighted observed standard deviation of correlations; $\hat{\bar{\rho}}$ = mean true-score correlation (corrected for unreliability for both variables); SD_ρ= standard deviation of corrected correlations; CV_{LL} and CV_{UL} = lower and upper bounds, respectively, of the 80% credibility interval; CI_{LL} and CI_{UL} = lower and upper bounds, respectively, of the 95% confidence interval around the mean true-score correlation; %Var = percentage of variance attributable to statistical artifacts.

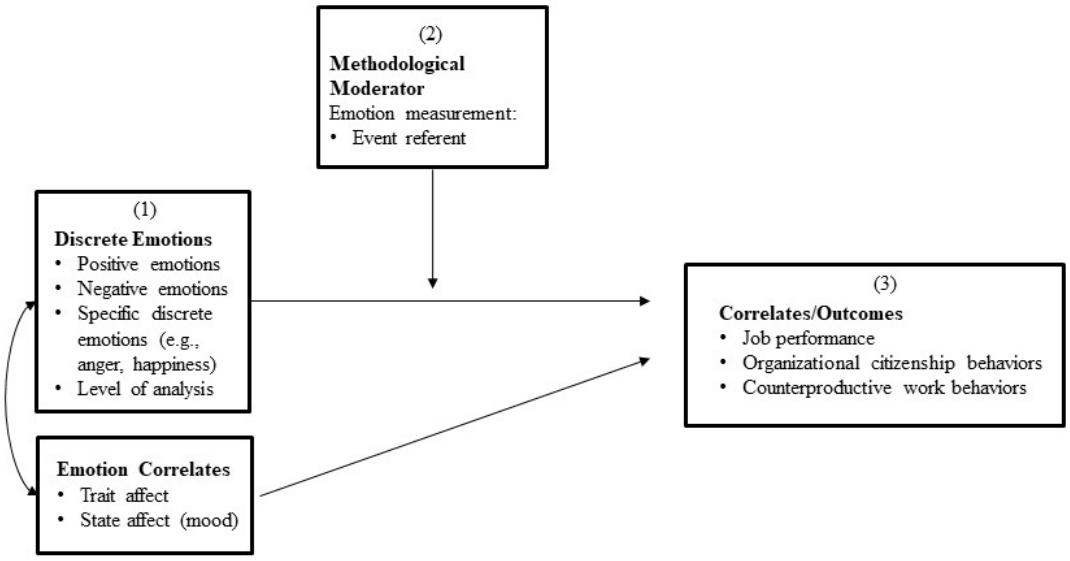

Figure 1. ***Emotion and performance behaviors***

APPENDIX: CODING AND ANALYSIS DECISIONS

Variables in the meta-analysis	Emotion	Coded for all emotions identified in Shaver et al. (1987) and emotions used in subscales of popular measurement tools (PANAS, JAWS). Proxies for positive emotion included affective wellbeing (used JAWS) and emotional engagement (modified to be an indicator of positive emotion).
	Job performance	Proxies included GPA and exam grade.
	OCB	OCB-I included helping behavior, cooperation, altruism, positive social behaviors. OCB-O included voice and loyal boosterism.
	CWB	CWB-I included incivility, interpersonal deviance, harmful behaviors, abuse, aggression, and retaliation/revenge. CWB-O included organizational deviance, service sabotage, unethical behavior, theft, and job neglect.
Coding decisions	Sample size	If multiple sample sizes were reported in error, the smallest sample size was coded to be more conservative.
	Reliability estimate	If multiple reliability estimates were reported in error, the larger reliability was coded to be more conservative.
Inclusion in meta-analysis	Level of analysis	Studies that reported cross-level correlations were not included. Studies that aggregated or assigned down for both variables at the same level were included.
	Self vs. observer report	Performance was divided for analysis. If the same sample had both a self- and observer-report OCB or CWB rating, only the observer-report rating was included. Notable study: Gooty et al. (2014) – Used mostly observer-report data for performance but included a small amount of self-report if observer-report was not available for the performance event. This was kept for objective task performance.

	Effect sizes	I manually flipped the sign for an effect size that measured performance as total task errors (i.e., higher score is lower performance: Goldberg & Grandey, 2007).
Composite correlations	Emotion	Created composite correlations among discretes for the valence category associations. If a composite correlation could not be computed, the study was not used in the valence category association (i.e., I did not pick and choose between discretes). Notable study: Cohen-Charash (2009) - I created a composite of composite correlations for negative emotion.
	Job performance	Created composite correlations if multiple indicators of performance were provided for the same sample. If a composite correlation could not be computed, the most meaningful performance variable was selected.
	OCB	Created composite correlations for OCB-I and OCB-O variables for the overall OCB association. If a composite correlation could not be computed, the study was not included in the overall OCB association (i.e., I did not choose between OCB-I and OCB-O).
	CWB	Created composite correlations for CWB-I and CWB-O variables for the overall CWB association. If a composite correlation could not be computed, the study was not included in the overall CWB association (i.e., I did not choose between CWB-I and CWB-O).
Reliability estimates in the meta-analysis	No reliability estimate	The average of all the studies (in the same level of analysis) was imputed.
	Intra-individual level	The average of the reliabilities was used if reported. If a range was reported, the highest reliability estimate was used to be more conservative.
	Team level	ICC(2) was used as the reliability estimate. If the team variable was averaged (not aggregated), the individual-level reliability was used.

	Composite correlations	The reliability calculated for the composite correlation was used unless it was below .6. If the reliability was below .6, a 1.00 was imputed to be more conservative.