

THE ROLE OF AFFECTIVE FORECASTING IN TASK BEHAVIOR: HOW – AND FOR WHOM – DO INACCURATE EMOTIONAL PREDICTIONS IMPACT TASK PERFORMANCE?

by

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## **ABSTRACT**

**THE ROLE OF AFFECTIVE FORECASTING IN TASK BEHAVIOR: HOW – AND FOR WHOM – DO INACCURATE EMOTIONAL PREDICTIONS IMPACT TASK PERFORMANCE?**

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Given the amount of time humans spend thinking about potential, future hedonic outcomes, there is a considerable amount of research evaluating the accuracy of such anticipated emotional reactions, also known as affective forecasts. To-date, much research on the topic suggests that people do not accurately predict how they will feel in response to future events; however, existing approaches are limited to identifying the nature of affect discrepancies/errors and/or focus on hedonic expectations surrounding relatively intense, infrequent events. This study examined how affective forecasting accuracy influences routine task performance and, secondarily, for whom, and through which mechanisms such may occur. Participants were asked to identify the date of an upcoming college exam. Later, they were asked to report their emotional experiences while studying for the exam and to complete measures of attentional focus and coping behaviors. Following the exam, grades were collected from students in order to determine

how task-related behavior influences subsequent task performance. Results suggest that people made relatively accurate predictions with respect to general affect and were equally inaccurate when predicting positive versus negative affect. In addition, approximately the same proportion of respondents over- vs. underpredicted general affect. Compared to general affect, many more people made accurate predictions about discrete emotions. Hypotheses were made about general positive and negative affect but significant findings were mostly yielded through exploratory analyses of discrete emotions. Specifically, the relationship between conscientiousness and attentional focus depended on affective forecasting inaccuracy: less conscientious individuals indicated lower levels of attentional focus when overpredicting – versus underpredicting - general PA. In contrast, highly conscientious individuals exhibit the same levels of attentional focus irrespective of whether they had over- versus underpredicted positive affect. The effect observed for positive affect seems to have been driven by three specific positive emotions: active, alert, and attentive. Several potential influences on affective forecasting in this context are discussed: the amount of temporal distance between the time the forecast is made and affect experienced, the relevance of certain emotions, the type of routine task or work event, and whether the affect referent is broad versus specific.

## INTRODUCTION

*The mind . . . is never satisfied with the objects immediately before it, but is always breaking away from the present moment, and losing itself in schemes of future felicity* - Johnson, 1855/1749: 14, as cited in Dane and George (2014)

The human mind is a frequent wanderer. We spend significant time envisioning what the past and the future – both real and imagined – were/would be like and how both (would) feel. This tendency to engage in mental “time travel” is quite common, with people spending up to half of their waking time thinking about something other than present-moment experiences (Killingsworth & Gilbert, 2010). Indeed, recognizing the problems resulting from such wanderings, training the mind to stay psychologically rooted in the present remains an important element of some philosophical and religious traditions (e.g., mindfulness meditation, Buddhism).

Mental voyages into the future are different from voyages into the past, as the former involve imagination of how upcoming situations and events not *yet* experienced impact well-being in the future. People envision the future by thinking about how they would feel in response to an event or if placed in a particular situation (e.g., Halpern & Arnold, 2008; Kawakami, Dunn, Karmali, & Dovidio, 2009). For instance, individuals make predictions about emotions they expect to feel when they decide whom to marry and whether and where to pursue an advanced degree, as well as where to dine out and

when to take a vacation. As such, much of human emotional experience therefore involves not only presently felt emotions, but also future or *anticipated* affect (Richard, van der Pligt, & de Vries, 1996).

Given the amount of time we spend thinking about the potential, future hedonic outcomes, there is a considerable amount of research evaluating the accuracy of such anticipated emotional reactions. This area of research on *affective forecasting* (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998) has examined the degree of equivalence between predicted versus experienced emotional reactions. To-date, much research on the topic suggests that people are flawed in their ability to predict how they will feel in response to future events (e.g., Ayton, Pott, & Elwakili, 2007; Buehler & McFarland, 2001; Gilbert & Wilson, 2007; Levine, Lench, Kaplan, & Safer, 2012; Sanna & Schwarz, 2004). For instance, winning the lottery presumably is glorified by those who play it and who believe that, in great quantities, money will enhance happiness. However, Brickman, Coates, and Janoff-Bulman (1978) found that, a year after winning the lottery, winners' happiness was no different than before winning the lottery. Similarly, people often mispredict how their quality of life would be impacted by a serious health condition; in one study, both family members and physicians caring for those affected by metastatic breast cancer provided lower estimations of the quality of life of cancer patients than those provided by the patients themselves (Wilson, Dowling, Abdoell, & Tannock, 2000).

Despite much research on the topic, the vast majority of studies on affective forecasting are limited to identifying the nature of affect discrepancies/errors and/or the

consequences of forecasting biases for decision-making, specifically. Moreover, although people *regularly* envision the future (Killingsworth & Gilbert, 2010), affective forecasting studies tend to focus on hedonic expectations surrounding relatively intense, infrequent events (e.g., major personal illness, winning the lottery) and/or focus on one-time decisions (e.g., how much money to gamble). Taken together, scholars have yet to examine the influence of affective biases on common, task-related behaviors. Such behaviors are unique compared to the phenomenon typically examined in affective forecasting studies; unlike singular decisions or other types of behaviors, task-related behaviors involve deliberate application of effort over time (i.e., motivation).

### **Theoretical and Practical Importance of Anticipated Affect for Task Behavior**

The study of affective antecedents to task performance could theoretically benefit from an examination of the influence of affective forecasting errors. Although the implications of affect in organizational functioning have become widely recognized in the past two decades (e.g., Barsade, Brief, & Spataro, 2003), research on the link between affect and performance-related behavior suggests modest, and somewhat inconsistent, relationships (e.g., Kaplan, Bradley, Luchman, & Haynes, 2009). Indeed, the accuracy of the “Happy-Productive Worker” Hypothesis (Staw, 1986) is still debated amongst organizational scholars (e.g., Zelenski, Murphy, & Jenkins, 2008). Such inconsistencies may be, in part, due to a limited focus on the study of the influence of *presently*-felt affect on performance. A more complete understanding of the affect-performance relationship could be achieved through consideration of *anticipated* affect and whether

*differences* between one's expected versus experienced affect (i.e., inaccuracy) impact performance behaviors.

There are also practical benefits of studying the influence of affective forecasting accuracy on task-related behavior. One basic perspective on the relationship between affect and performance is that affect influences performance behavior through motivational processes (e.g., George & Brief, 1996). Therefore, this examination could help determine whether forecasting inaccuracy is generally harmful or beneficial with respect to its influence on individual motivation and task-related behaviors. This point is significant because most of the research on affective forecasting accuracy generally assumes that people's mispredictions about how they feel will have costs, but this study explores the possibility that biases could be beneficial to individuals and organizations. For example, inaccuracy could be helpful for some people because it may motivate individuals to work harder to achieve emotional goals not yet realized. If inaccurate forecasts are (also) harmful to individual performance, measures could be taken to reduce errors.

### **Aims of the Present Study**

The goal of this study is to begin to examine how affective forecasting accuracy may either positively or negatively influence task performance and, secondarily, for whom, and through which mechanisms such may occur. In pursuing this goal, this study seeks to further elucidate what researchers have suggested is a complex relationship (e.g., Elfenbein, 2007) between affect and performance. Specifically, affect-as-information theory is drawn from to make predictions about how discrepancies between predicted and

felt emotions will influence attentional focus and problem-focused coping behavior, two proposed antecedents to task performance. In addition, it is proposed that the relationships between affective forecasting accuracy and outcomes will depend on conscientiousness and emotional intelligence, two theoretically relevant individual differences. Taken together, this study seeks to answer the following questions:

1) How accurate are affective forecasts that are made in relation to task-related behavior?;

2) Through what mechanisms do (mis)predictions about future affective experiences impact task performance?; and,

3) What role do individual differences play in accounting for the impact of affective forecasting errors on behavior?

### **Conceptualizing Affective Forecasting Accuracy**

Various conceptualizations of affective forecasting accuracy have emerged within the larger literature. Typically, affective forecasting accuracy has been conceptualized as the mathematical difference between anticipated and experienced affect within and/or between persons (so-called absolute and/or relative accuracy, respectively; Mathieu & Gosling, 2012). The multidimensional nature of affect has also led to examinations of affective accuracy with respect to valence (Loewenstein, 2007), intensity (Hoerger, Chapman, Epstein, Duberstein & 2012), and duration (Sieff, Dawes, & Loewenstein, 1999). That is, one might anticipate feeling happy but feel sad instead (misprediction of valence), anticipate becoming overcome by intense sadness, but instead

feel only mildly sad (misprediction of magnitude) and/or anticipate being depressed for the rest of one's life rather than just a month (misprediction of duration).

### **Systematic Affective Forecasting Errors and Biases**

An accumulation of social psychology research indicating that humans are not very skilled at predicting how they will feel in terms of magnitude, intensity, and/or duration has given rise to a nomenclature of affective forecasting errors people make when predicting future emotion, as well as associated underlying mechanisms.

First, the *durability bias* (also called the *impact bias*) is a tendency to overestimate both the intensity and duration of one's emotional reactions, both positive and negative (Gilbert et al., 1998). For example, among other major/high-stakes life events, such as being granted or denied tenure and being diagnosed with conditions that require use of a colostomy bag, seem to have less of an impact on long-term happiness than expected (Gilbert et al., 1998; Ubel, Loewenstein, Schwarz, & Smith, 2005). Research on the time course of affective forecasts has led scholars to differentiate between an *initial* intensity bias and a *decay* bias (Wilson & Gilbert, 2003), both of which can be viewed as a type of durability bias. The former refers to false predictions about the initial emotional impact of an event, whereas the decay bias refers to false predictions about the rate with which an emotional reaction will decay or diminish over time. For example, people often surmise that their wedding day will be the "happiest" day of their lives, yet, plausibly they are typically less ecstatic than they anticipated. Further, over time, "honeymoon phase" happiness declines at a faster rate than one expected.

With these errors in mind, scholars have attempted to uncover reasons why people commit affective forecasting errors. One mechanism proposed to explain the difficulty people have in predicting future emotions is *immune neglect*. This represents a tendency to overlook coping strategies<sup>1</sup> (i.e., aspects of the so-called “psychological immune system”) that can reduce distress (Gilbert et al., 1998). Notably, immune neglect is about failure to understand how one will *adapt* to either negative or positive events (Schkade & Kahneman, 1998). For example, it is often assumed that living with a serious illness will substantially detract from happiness and overall quality of life, yet some studies have found that patients are just as happy as their healthy peers (Riis et al., 2005).

Another factor that has been implicated as a possible cause of affective errors and biases is *focalism*, the tendency to view events in a vacuum (Wilson et al., 2000). That is, one might think too much about a certain event without considering the other events that will influence future feelings (i.e., neglecting to consider context). Notably, focalism can occur both prospectively and retrospectively, whereas immune neglect is conceptualized as a prospective phenomenon.

In a classic study demonstrating focalism, Schkade and Kahneman (1998) asked students living in Southern California and in the Midwestern United States to assess their own happiness and the happiness of students at the other location. Although self-reported life satisfaction was the same for students in both regions, students expected Californians to be happier than Midwesterners.

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<sup>1</sup> Some terms that have been used in the psychological literature to describe this phenomenon include: the self-serving attribution, rationalization, self-enhancement, cognitive dissonance.

Finally, the so-called *empathy gap* (Loewenstein, 1996) suggests that people do not take into account biases introduced by their current emotional state when making forecasts about future affect. The empathy gap can take one of two forms: a “cold-to-hot” empathy gap and a “hot-to-cold” empathy gap. “Cold” refers to a *rational* system that generates logical responses to events, whereas “hot” refers to an *experiential* system that relies on relative emotional responses (Dunn, Forrin & Ashton-James, 2009). The “gap” refers to a disconnect that often occurs between the hot and cold systems. Specifically, a “cold-to-hot” gap describes instances when a current, non-aroused state prevents people from accurately predicting how intense visceral (e.g., hunger, thirst, pain, sexual arousal) emotional states will shape future behavior and cognitions.

In contrast, a “hot-to-cold” empathy gap describes situations in which a currently aroused state prevents people from accurately predicting the influence of future non-aroused emotional states on behavior and cognitions.

### **Consequences of Inaccurate Forecasts**

In addition to identifying and defining different types of affective forecasting errors, various consequences of forecasting inaccuracies have been documented. Primarily, this stream of research focuses on the role of affective inaccuracy in decision-making situations. Some of the decisions researched include important life choices, such as whether to seek medical testing (Rhodes & Strain, 2008) and the decision to get divorced (Lucas, 2005). Forecasting biases have also sometimes been implicated in more mundane decisions, including those surrounding personal health behaviors (Ruby, Dunn, Perrino, Gillis, & Viel, 2011) and where to take a vacation. One general takeaway from

research on affective inaccuracies and decision-making is that greater anticipated *pleasure* leads to risk-seeking, whereas greater anticipated *displeasure* leads to risk aversion (Mellers & McGraw, 2001).

Unlike the current investigation, the majority of existing studies do not allow for an examination of how affective accuracy translates into behaviors – versus hypothetical choices. Also, unlike prior research, the present study seeks to examine how affective forecasting accuracy influences effortful behavior within-persons and surrounding relatively routine tasks. With these contributions in mind, the current investigation represents a preliminary, empirical investigation of how discrepancies between expected versus experienced affect influence task-related behavior in a performance context that occurs with some regularity.

### **The Current Study**

**Affect and Performance.** Within the study of emotion/affect in work and organizations, scholars have identified various work-related consequences of both general mood and discrete emotions. Organizational outcomes associated with affect include creativity (e.g., Amabile, Barsade, Mueller, & Staw, 2005), decision-making (e.g., Isen & Labroo, 2003), turnover (e.g., Thoresen, Kaplan, & Barsky, Warren, & de Chermont, 2003), negotiation and conflict resolution (e.g., Barry, Fulmer, & Van Kleef, 2004), prosocial organizational behaviors (e.g., George & Brief, 1992) and job performance (e.g., Kaplan et al., 2009). In the current study, behavior engaged in while preparing for an upcoming task (hereafter referred to as “task-related” behavior) and subsequent task performance will be examined. Although there is evidence suggesting the pervasiveness

of *affect*-eliciting events in organizations (Ohly & Schmitt, 2015), the link between affect and performance remains unclear in terms of *how* affect influences different behaviors.

This disconnect may be, in part, because affect is a within-person phenomenon that consists of not only one's current affective state, but also expectations about how one is going to feel at a given point in time (Loewenstein & Lerner, 2003; Loewenstein, Weber, Hsee, & Welch, 2001; Richard et al., 1996).

There are, arguably, three potential sources of affect in relation to a given focal or target event (here, episodic task performance). The first of these is one's present-moment affective state (e.g., "As I am working on this project, I feel somewhat interested"). As stated above, this source of affect has been the focus of past studies examining the affect-performance relationships and has yielded modest and somewhat inconsistent results (Kaplan et al., 2009). Second, task-related behavior could also be influenced by affect anticipated in relation to the same target event (e.g., "I will feel very interested when working on the project"). Third, anticipated and currently-felt affect could interact to influence work behaviors (e.g., "I expected to feel very interested but I only feel somewhat interested when working on the project"). Whether and how discrepancies between anticipated and current affect relate to episodic task-related behavior can help to clarify the affect-performance relationship. By focusing on the differences between anticipated and experienced affect, it is assumed that anticipated affect plays an important role in shaping future behavior beyond presently-felt affect. Of note, throughout this paper, the two-dimensional model of affect, wherein affect can be described as existing along two distinct, unipolar factors: 1) positive affect and 2) negative affect (Watson, Clark, &

Tellegen, 1988; Watson & Tellegen, 1985), is adopted. In this framework, high levels of positive and negative affect refer to pleasurable and non-pleasurable activation, respectively. Both dimensions can be measured either as a state (i.e., transient experiences) or a trait (stable, individual differences); the focus of this study is on the former.

Affect-as-information theory (Schwarz & Clore, 1988) is drawn from to make predictions about how affective forecasting accuracy will influence two predictors of performance on a self-regulated task (Kanfer & Ackerman, 1989; Struthers, Perry, & Menec, 2000). According to affect-as-information theory (Schwarz & Clore, 1988), affective feelings are functional insofar as they serve as informational input to evaluative judgments. More recent conceptualizations of the theory (e.g., Schwarz & Clore, 2007) have emphasized the ways in which affect provides information about the psychological environment in order to influence cognitive processing.

Notably, affect-as-information theory suggests that affect can impact one's perception of how well one is doing in terms of moving towards one's behavioral goals; particularly, whether to approach or avoid task/goal-directed behavior (Carver & Scheier, 1989). Regarding (currently) experienced affect, higher positive affect can lead one to discontinue effortful task work when interpreted as successful or adequate performance; in contrast, when interpreted as insufficient goal attainment, higher negative affect can lead one to continue working on the task at hand (e.g., Martin, Ward, Achee, & Wyer, 1993). Alternatively, positive affect may lead one to continue working on the task when interpreted as enjoyment. When interpreted as (lack of) enjoyment, negative affect can

lead an individual to abate work on the task. Thus, affect serves as motivational input that is subsequently interpreted; it is these interpretations that determine how one's affect will influence evaluations, decisions, and most relevant to this study, task-related behavior.

Here, it is suggested that affect discrepancies are also interpreted and have different motivational implications for task performance. Specifically, the current theorizing suggests that the impact of inaccuracy on behavior should partially vary as a function of the *type* of affective inaccuracy. Moreover, as elaborated upon below, how these affective experiences are interpreted – and subsequently influence behavior – should depend on individual differences in conscientiousness and emotional intelligence.

Given how affect is being conceptualized in this study, there are four distinct possibilities for types of affective inaccuracies: relative *overprediction* or *underprediction* of the intensity of negative and positive affect, respectively.

Overprediction of affect occurs when the intensity of anticipated (positive or negative) affect is greater than experienced affect, whereas underprediction occurs when experienced (positive or negative) affect is greater than anticipated affect. Among these four types of affective mispredictions, similarities can be drawn between 1) overprediction of positive affect and underprediction of negative affect and 2) overprediction of negative affect and underprediction of positive affect.

**Over-/Underprediction of Negative/Positive Affect.** Overprediction of negative affect means that one feels less negative than predicted; likewise, underprediction of positive affect reflects a situation in which one feels more positive than predicted. Thus, both experiences represent over fulfillment, insofar as the emotional experience exceeded

one's (relatively lower) positive and (relatively higher) negative expectations. Here it is argued that how people subsequently behave in light of this experience – specifically, the degree to which one applies effort and focuses on the task – will vary as a function of conscientiousness.

*Conscientiousness.* Conscientiousness is a stable personality trait that captures the tendency to be dependable, self-disciplined, hardworking, and achievement-striving across various situations (Goldberg, 1992). Conscientiousness and its facets are positively associated with a variety of adaptive outcomes, including those in self-regulatory processes such as learning ( $r = .28$ ; Blume, Ford, Baldwin, & Huang, 2010) and motivation ( $r = .28$ ; Judge & Ilies, 2002). Moreover, researchers describe highly conscientious individuals as those who have the ability to regulate attentional and behavioral impulses in the service of valued goals. (e.g., Eisenberg, Duckworth, Spinrad, & Valiente, 2014).

Applying these findings and rationale, when overpredicting positive affect and/or underpredicting negative affect, highly conscientious individuals should nevertheless push forward with the task at hand (see Figure 1). That is, highly conscientious individuals will not readily assume that a positive affective discrepancy in relation to the task implies sufficient goal progress and will continue to persist in earnest with task preparation. In contrast, when feeling unexpectedly pleasant, less conscientious individuals will focus more time and effort on off-task pursuits and activities, believing their positive feelings to be an indicator of adequate progress.

*Hypothesis 1:* Conscientiousness will positively predict on-task attentional focus.

*Hypothesis 2:* The positive relationship between conscientiousness and on-task attentional focus will be stronger when experienced positive affect exceeds anticipated positive affect than when anticipated positive affect exceeds experienced positive affect.

*Hypothesis 3:* The positive relationship between conscientiousness and on-task attentional focus will be stronger when anticipated negative affect exceeds experienced negative affect than when experienced negative affect exceeds anticipated negative affect.

***Attentional Focus and Task Performance.*** As seen in Figure 1, the effects of over/underprediction of affect are proposed to influence task performance through their impact on self-regulation. Self-regulation is the process by which individuals determine where and to what extent they will apply personal resources. One of these resources is attentional focus, which involves filtering out task-irrelevant thoughts and perceptions through the narrowing of one's focus to limited stimuli. People regulate their attention toward or away from a focal performance episode as a function of momentary allocation of personal resources (Beal, Weiss, Barros, and MacDermid's (2005). These resources include cognitive ability, skills, knowledge, and, notably, affect. Much prior research suggests that these resources account for differences in average performance between individuals (e.g., Ackerman, 1987), and that performance at a given point in time depends on the availability of such resources (e.g., McCloy, Campbell, & Cudeck, 1994). Performance should therefore be facilitated to the extent that people direct and focus their attentional resources on the task at hand; likewise, when people prioritize and are focused on other off-task pursuits, performance will suffer.

*Hypothesis 4:* On-task attentional focus will positively predict task performance.

**Over-/Underprediction of Positive Affect/Negative Affect.** Similarities can also be drawn between the underprediction of negative affect and the overprediction of positive affect. Specifically, overprediction of positive affect means that one feels less positive affect than predicted; likewise, underprediction of negative affect reflects a situation in which one feels greater negative affect than predicted. Thus, both represent a disappointment insofar as the emotional experience did not meet one's (relatively higher) positive and (relatively lower) negative expectations. Given this, I propose that people will, to varying degrees, engage in problem-focused coping during task performance aimed at reducing such negative experiences. Specifically, the degree to which one actively self-regulates following these types of affective discrepancies depends on one's level of emotional intelligence (see Figure 1).

***Emotional Intelligence.*** Emotional intelligence refers to a set of emotion-related processes that involve perceiving, using (sometimes referred to as "integrating"), understanding, and managing emotions (MacCann & Roberts, 2008; Mayer, Salovey, & Caruso, 2002). According to Mayer and Salovey (2007), the four branches of emotional intelligence can be arranged hierarchically from 1) *perceiving* to 2) *integration* to 3) *understanding* and finally, 4) *managing* emotions. Management, the fourth and most complex branch is associated with the balancing of various factors (e.g., motivational, cognitive) needed to successfully cope with feelings (Mayer, Salovey, Caruso, & Sitarenios, 2001). For example, Allen and colleagues (2015) found that individuals who score high on emotion management were more likely to use situation modification, which

is a relatively *active* effort to address the problem. These results are corroborated by meta-analytic findings which suggest that higher psychopathology is related to greater use of situation selection (e.g., avoidance) and attentional deployment (e.g., rumination) rather than more goal-directed coping methods (Aldao, Nolen-Hoeksema, & Schweizer, 2010). Given emotion management's role in effective emotion regulation, it is proposed that:

*Hypothesis 5:* Emotional intelligence (management) will positively predict problem-focused coping.

*Hypothesis 6:* The positive relationship between emotional intelligence (management) and problem-focused coping will be stronger when anticipated positive affect exceeds experienced positive affect than when experienced positive affect exceeds anticipated positive affect.

*Hypothesis 7:* The positive relationship between trait emotional intelligence (management) and problem-focused coping will be stronger when experienced negative affect exceeds anticipated negative affect than when anticipated negative affect exceeds experienced negative affect.

***Problem-Focused Coping and Task Performance.*** As seen in Figure 1, the effects of over/underprediction of affect are proposed to influence task performance through their impact on problem-focused coping. Coping refers to an individual's cognitive and behavioral efforts for reducing the negative consequences of stressful events. Problem-focused coping (also called task-oriented coping) is generally considered to be constructive because it implies an active focus on problem resolution rather than

passive management of one's feelings; for example, problem-focused coping involves defining problems, generating strategies, and weighing alternatives in terms of costs and benefits (Lazarus & Folkman, 1984). Regarding outcomes, research suggests that high levels of problem-focused coping and its associated cognitions and behaviors are linked to better performance and higher motivation, especially in stressful, evaluative settings (e.g., Bagget, Saab, & Carver, 1996; Struthers et al., 2000).

*Hypothesis 8: Problem-focused coping will positively predict task performance.*

## METHOD

### Participants

Students from a large, public university participated in this study. Of the 607 participants who initially expressed interest in participating in the study, 155 were eligible and took the first survey. One hundred four of 155 participants completed the remaining surveys. Thus, 104 complete responses<sup>2</sup> were used in subsequent analyses. A series of ANOVA analyses and chi square tests indicated that there were no significant differences between those who only completed survey 1 and those who completed all remaining surveys on any demographic variables.

Approximately 66% of the final sample were female and the average age of participants was 20.87 years ( $SD = 3.20$ ). The racial and ethnic composition of the sample was 36% White, 36% Asian, 11% African American, and 78% Hispanic, with other groups each representing less than 5% of the sample. Participants were 22% freshmen, 16% sophomores, 26% juniors, 22% seniors, and 14% graduate students.

### Procedure

Participants were recruited through various means, including listing the study on the psychology department research participation system, directly recruiting in classes, and posting flyers around the campus. To incentivize participation and increase quality of

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<sup>2</sup> 104 was determined to be a sufficient sample size based on previous between-person studies of affective forecasting (Ayton, Pott, & Elwakili, 2007, study 1; Hoerger, Quirk, Lucas, & Carr, 2009) and using a power analysis with a specified power level of .80,  $\alpha$  of .05, and an effect size of .10.

data collection, participants were assigned course credit (if applicable) and/or a monetary reward based on the number of surveys completed.

Following recruitment, participants were asked to identify the date of an upcoming class exam that was at least a week away. Several variables (e.g., degree of familiarity with the exam format) can influence performance on the first exam of the semester within a course. To reduce these competing variables, participants were asked to provide information for exams other than their first in that course. Participants then made forecasts about how they predicted feeling (i.e., anticipated affect) while studying for an upcoming exam.

This study aimed to assess immediate experiences in the natural environment; as such, an event-contingent design (Wheeler & Reis, 1991) in which participants later reported how they felt while studying for the exam (i.e., experienced affect), was used. Specifically, participants were emailed a survey link each of the three days leading up to their exam and were instructed to complete the survey directly following each study episode. If they were not currently studying for the exam when they received the email, they were instructed to save the email/survey link and set a reminder so that they could complete it later in the day. Several reminder emails were also sent on each day. Also during this time, participants were asked to complete measures of on-task attentional focus and coping behaviors.

Three (versus more) days were chosen given evidence that most studying for college exams occurs in the days immediately preceding the exams (e.g., Pychyl, Lee, Thibodeau, & Blunt, 2000). Participant data were retained as long as participants

completed one measure of experienced affect, on-task attentional focus, and coping behavior in the days leading up the exam. Scores were aggregated for those who completed the measure more than once across the three days.

Following the exam, grades were collected from students via survey in order to examine how task-related behavior influences subsequent task performance. Participants also provided demographic information and completed several other measures, including those assessing individual differences. The following measures were administered:

### **Measures**

**Anticipated affect.** One week prior to the identified exam, participants were asked to forecast the affect they anticipated experiencing while studying for the exam. Specifically, affect was measured using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), and participants were given the following prompt: “Read each item and indicate the extent to which you think you will feel the following emotions *while* studying for the exam”. The PANAS comprises 20 items (10 each for positive affect and negative affect) that consist of emotion terms (e.g., “anxious” and “interested”). Items were reported on a 5-point scale ranging from 1 (not at all) to 5 (extremely). Coefficient  $\alpha$  reliability for anticipated positive and negative affect = .82 and .83, respectively).

**Experienced affect.** As with anticipated affect, experienced affect was assessed using the PANAS (Watson et al., 1988) using a five-point scale ranging from 1 (not at all) to 5 (extremely). On this occasion, directly following each study episode, participants were asked to indicate the extent to which they had felt each emotion while studying for

the exam. Coefficient  $\alpha$  reliability for experienced positive and negative affect = .89 and .90, respectively.

**Attentional focus.** Perceived attentional focus was assessed using a four-item scale developed by Ghani and Deshpande (1994). Items were adapted to the context of studying (i.e., “When studying today, I was..” “...engrossed,” “...absorbed,” “...My attention was focused on studying” and “I concentrated on studying.” Responses were reported on a 5-point scale ranging from 1 (not at all) to 5 (extremely). Coefficient  $\alpha$  reliability for this measure = .85.

**Coping.** Problem-focused coping was assessed using seven items adapted from the problem-focused coping scales of the *Student Coping Instrument* (SCOPE; Struthers et al., 2000). Items from three different subscales were used: Academic Planning (e.g., I thought hard about what steps to take”), Active Study Coping (e.g., “I used a study guide”), and General Active Coping (e.g., “I took action to make progress”). Participants were asked to respond with respect to the current study session and were asked to record responses using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Coefficient  $\alpha$  reliability for these seven items = .74.

In addition, problem-focused coping was measured using three items adapted from a measure developed by Pham and Taylor (1999). These items assess academic planning, which can be viewed as a cognitive, problem-focused coping strategy (Taylor & Schneider, 1989). Participants were asked to respond to the following questions with respect to the beginning of each study session, “To what extent...,” “...had you figured out exactly how you might/would study for the exam?;” “did you have a plan for how

(i.e., when and where) you will/would study for the exam?;" and "...did you feel that you have properly organized the information and time you will/did need for doing well on this exam?" Responses were reported on a 5-point scale ranging from 1 (not at all) to 5 (completely). Coefficient  $\alpha$  reliability for these three items = .74.

**Task enjoyment and goal progress.** To capture potential mediating mechanisms, participants also reported task enjoyment and goal progress. Task enjoyment was assessed using a single item asking participants to indicate the extent to which they enjoyed the study session on a scale ranging from 1 (not at all) to 5 (extremely). To assess goal attainment, participants were asked to think about the goals they had set before studying and to respond to the following four items (Greguras & Diefendorff, 2010): "I have made considerable progress toward attaining those goals," "I accomplished what I set out to do," "I am achieving what I wanted to achieve with those goals," and "I am happy with my progress toward attaining those goals." Responses were made on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Coefficient  $\alpha$  reliability for these four items = .94.

**Task performance.** Task performance was assessed via self-reported performance on the current exam on a scale ranging from 0 to 100.

**Conscientiousness.** The personality trait of conscientiousness was assessed using the Big Five Inventory (John & Srivastava, 1990). The conscientiousness dimension contains nine items and assesses competence, order, dutifulness, achievement-striving, self-discipline, and deliberation. The measure includes items such as: "I see myself as someone who makes plans and sticks with them" and "I see someone as someone who

does things efficiently.” Items were asked on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Coefficient  $\alpha$  reliability for this scale = .71.

**Emotional intelligence.** Emotional intelligence was measured using the Situational Test for Emotional Management-Brief (STEM-B; MacCann & Roberts, 2008). This 18-item measure adopts the ability-based approach to assessing Emotional Intelligence. Specifically, the STEM-B is a situational judgment test whereby testers are presented with a written description of a situation with several possible responses. For example, a typical question includes a prompt such as the following: “Mario is showing Min, a new employee, how the system works. Mario’s boss walks by and announces Mario is wrong about several points, as changes have been made. Mario gets on well with his boss, although they don’t normally have much to do with each other.” Respondents are then asked, “What action would be the most effective for Mario?” and asked to select from a list of options. Consistent with past research, dichotomous scoring, with the best option (as determined by expert raters) scored as “1” and all other responses scored as “0”, was used. Responses therefore ranged from 0 to 18.

**Demographic and Control variables.** Participants were asked to provide demographic information, namely, their age, gender, race, ethnicity, and year in school. Moreover, because a number of variables could influence exam performance in a given class, the following variables were collected and were to be evaluated as control variables in the analyses predicting exam performance (Hypotheses 4 and 8): total number of credits taken that semester, past course exam performance, number of hours per week

worked outside of classes, current, overall cumulative Grade Point Average (GPA) and SAT score.

In addition, trait affect, which is considered to be a more stable and enduring personality characteristic, was also assessed and evaluated as a control variable in the moderation analyses. As with anticipated and experienced (state) affect, positive and negative trait affect were measured using the PANAS (Watson et al., 1988) using a five-point scale ranging from 1 (not at all) to 5 (extremely). On this occasion, participants were asked to indicate the extent to which they generally feel each emotion in everyday life (coefficient  $\alpha$  reliability for trait positive and NA = .87 and .88, respectively).

## RESULTS

Prior to testing the hypotheses, descriptive statistics (i.e., means, standard deviations, and intercorrelations) across all focal variables were computed (see Table 1). Notably, anticipated and experienced affect were strongly correlated ( $r = .64$  for positive affect and  $.70$  for negative affect, respectively), as were anticipated and trait positive affect ( $r = .46$ ) and negative affect ( $r = .62$ ).

As a part of this step, the number of individuals who overpredicted (i.e., those for whom anticipated affect exceeded experienced affect) and underpredicted (i.e., those for whom experienced affect exceeded anticipated affect) both negative affect and positive affect were computed in order to address the foundational question of interest - that is, whether forecasts made in relation to task-related behaviors are accurate. This information was determined for those who over- or underpredicted affect by any magnitude, as well as for those who over- or underpredicted affect by greater than 1 scale point. For positive affect, 46% overpredicted and 52% underpredicted affect by any magnitude, whereas 2% were completely accurate (i.e., anticipated affect equaled experienced affect). Similar results were obtained for negative affect; 48% overpredicted and 45% underpredicted affect, whereas 7% were accurate. However, only 8% overpredicted both positive affect and negative affect, and 6% of participants underpredicted both positive affect and negative affect by greater than 1 scale point. The absolute value of the magnitude of the discrepancy between experienced and anticipated affect ranged from .03 to 1.70 for positive affect and from .03 to 1.67 for negative affect.

Hierarchical regression analyses were also performed in order to determine the incremental importance of anticipated affect compared to experienced affect. Overall<sup>3</sup>, results indicated that anticipated affect did not significantly predict attentional focus, coping behaviors, or task performance above and beyond experienced affect (all  $p$ s > .05).

### **Tests of Hypotheses**

Hypotheses 1, 4, 5, and 8 were tested using regression analyses. Conscientiousness did not significantly predict on-task attentional focus ( $\beta = .15, p = .12$ ). Emotional intelligence did not significantly predict problem-focused coping behaviors when assessed using the SCOPE ( $\beta = .13, p = .20$ ), or when using the Pham and Taylor (1999) measure ( $\beta = .12, p = .24$ ). On-task attentional focus significantly predicted task performance, but this relationship was no longer significant after controlling for previous exam score, GPA, SAT score, and hours worked outside of class ( $\beta = .14, p = .18$ ). Likewise, problem-focused coping behavior did not positively predict task performance when assessed using the SCOPE ( $\beta = .11, p = .26$ ), or when using the Pham and Taylor (1999) measure ( $\beta = .07, p = .51$ ). Thus, Hypotheses 1, 4, 5, and 8 were not supported.

Hypotheses 2, 3, 6, and 7 were tested with a series of moderated regression analyses with on-task attentional focus and coping behaviors each regressed on conscientiousness and emotional intelligence (respectively), the affect moderator

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<sup>3</sup> Positive affect significantly predicted coping behaviors as assessed by the SCOPE; however, the direction of this relationship was opposite of what was expected ( $\Delta R^2 = .04, \beta = -.24, p = .04$ ).

variable, and the interaction term. A dichotomous moderator variable distinguishing a) overpredictors of positive affect from underpredictors of positive affect and b) overpredictors of negative affect from underpredictors of negative affect was used.

When testing Hypotheses 2 and 3, results did not indicate a significant interaction between positive ( $\beta = .36, p = .10$ ) or negative ( $\beta = .10, p = .68$ ) affective forecasting inaccuracy and conscientiousness in predicting attentional focus. Thus, Hypotheses 2 and 3 were not supported. Regarding Hypotheses 6 and 7, affective forecasting inaccuracy did not significantly interact with emotional intelligence in predicting problem-focused coping when assessed using the SCOPE ( $\beta = .03, p = .43$  for positive affect, and  $\beta = .02, p = .57$  for negative affect), or when using the Pham and Taylor (1999) measure ( $\beta = .02, p = .68$  for positive affect and  $\beta = -.02, p = .71$  for negative affect). Thus, Hypotheses 6 and 7 also were not supported.

### **Exploratory Analyses**

**Examination of acutely inaccurate predictors.** Given that this study was an initial examination of the role of inaccuracy for task-related behaviors and because individuals who are very inaccurate may plausibly differ from those who are only slightly accurate, Hypotheses 2, 3, 6, and 7 were re-tested using in a series of moderated regression analyses where overpredictors were considered to be those for whom anticipated affect exceeded experienced affect by 1 scale point or greater.

When re-testing Hypothesis 2, results indicated a significant interaction between positive affective forecasting inaccuracy and conscientiousness in predicting attentional focus ( $\beta = .97, p = .04$ ); however, as shown in Figure 2, the nature of the interaction was

not as predicted. Specifically, tests of simple slopes revealed a significant positive relationship between conscientiousness and attentional focus when anticipated positive affect exceeds experienced positive affect (i.e., overprediction) ( $\beta = 1.02, p = .03$ ), but a nonsignificant relationship between conscientiousness and attentional focus when experienced positive affect exceeds anticipated positive affect (underprediction) ( $\beta = .05, p = .70$ ). In addition, this result was no longer significant after controlling for trait positive affect ( $\beta = .22, p = .77$ ). When re-testing Hypothesis 3, negative affective forecasting inaccuracy affect did not significantly interact with conscientiousness in predicting on-task attentional focus ( $\beta = -.08, p = .88$ ). Thus, Hypotheses 2 and 3 were, again, unsupported.

Hypotheses 6 and 7 were also not supported when re-tested using the new moderator variable: affective forecasting inaccuracy did not significantly interact with emotional intelligence in predicting problem-focused coping when assessed using the SCOPE ( $\beta = .01, p = .92$  for positive affect, and  $\beta = -.09, p = .13$  for negative affect), or when using the Pham and Taylor (1999) measure ( $\beta = .05, p = .66$  for positive affect and  $\beta = .01, p = .95$  for negative affect).

**Analysis of discrete emotions.** It was possible that an analysis of specific emotions – rather than generalized positive or negative affect – would yield different results. Indeed, organizational scholars have recently made evident the value of the study of discrete emotions (e.g., Barsade & O’Neill; Cohen-Charash & Larsen, 2017; Hu & Kaplan, 2015) in addition to diffuse affective states. Accordingly, several exploratory analyses were performed with the twenty discrete emotions assessed using the PANAS.

First, as with general positive and negative affect, descriptive statistics were computed. Results indicated that predicted and experienced discrete emotions were moderately to strongly correlated ( $r$ s range from .34-.61 for the 10 positive emotions and from .43-.65 for the 10 negative emotions). Additionally, the number of individuals who over- and underpredicted all 20 emotions by any magnitude, and by greater than 1 scale point were computed. The full results of this analyses can be seen in Table 2. To summarize, 14-52% (depending on the specific emotion) overpredicted affect, and 22-56% underpredicted affect by any magnitude, and between 20-58% were completely accurate. 12-39% of participants overpredicted and 9-29% underpredicted discrete emotions by greater than 1 scale point. The absolute value of the magnitude of the discrepancy between experienced and anticipated emotions ranged from .17 to 4.00.

Following computation of descriptive statistics, a series of moderated regression analyses were performed to replicate tests of Hypotheses 2, 3, 6, and 7; however, this time, dichotomous moderator variables distinguishing overpredictors from underpredictors of each discrete emotion – rather than general positive affect or negative affect – were entered into the analyses.

As with the tests of general positive and negative affect, overpredictors were considered to be those for whom each anticipated discrete emotion exceeded the experienced discrete emotion by any magnitude<sup>4</sup>. Results indicated a significant interaction between affective forecasting accuracy for three of the positive discrete

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<sup>4</sup> The results from the analyses where overpredictors were considered to be those for whom each anticipated discrete emotions exceeded experienced discrete emotions by 1 scale point or greater can be viewed in Figures 7 and 8.

emotions – active ( $\beta = .79, p = .00$ ), alert ( $\beta = .59, p = .02$ ), and attentive ( $\beta = .51, p = .04$ ) – and conscientiousness in predicting attentional focus (see Figures 3-5). Tests of simple slopes revealed a significant positive relationship between conscientiousness and attentional focus when anticipated exceeded experienced assessments of feeling active ( $\beta = .79, p = .00$ ), alert ( $\beta = .37, p = .04$ ), and attentive ( $\beta = .34, p = .05$ ) (i.e., overprediction), but a nonsignificant negative relationship between conscientiousness and attentional focus when experienced exceeded anticipated assessments of feeling active ( $\beta = -.01, p = .99$ ), alert ( $\beta = -.22, p = .23$ ), and attentive ( $\beta = -.17, p = .33$ ) (i.e., underprediction). However, results were no longer significant for alertness and attentiveness after controlling for trait positive affect ( $\beta = .31, p = .20$  for alertness and  $\beta = .17, p = .44$  for attentiveness).

Moreover, as seen in Figure 6, results revealed a significant interaction between affective forecasting accuracy for active ( $\beta = .11, p = .04$ ) and emotional intelligence in predicting problem-focused coping (Pham & Taylor, 1999). Simple slopes tests indicated that there was a significant positive relationship between emotional intelligence and problem-focused coping when anticipated exceeds experienced assessments of feeling active (i.e., overprediction) ( $\beta = .07, p = .05$ ), but a nonsignificant negative relationship between conscientiousness and attentional focus when experienced exceeds anticipated assessments (i.e., underprediction) ( $\beta = -.04, p = .28$ ). Here again, the results were no longer significant after controlling for trait positive affect ( $\beta = .06, p = .20$ ).

A series of mediation analyses were then conducted using the Macros developed by Hayes (2015) in order to test the mechanisms through which inaccuracy may influence

task-related behaviors for the abovementioned significant models. Results of these analyses did not indicate that either perceptions of task progress or enjoyment mediated the relationships between inaccuracy and task-related behavior (all CIs include 0).

**Comparison of inaccurate predictors to accurate ones.** Although specific hypotheses were not offered, additional regression analyses were performed to compare accurate responders to a) overpredictors of positive affect and negative affect and to b) underpredictors of positive affect and negative affect. Accordingly, a series of moderated regression analyses with dichotomous affective moderator variables distinguishing accurate respondents from over- and underpredictors were performed. Results did not reveal any significant interactions between affective forecasting accuracy and conscientiousness in predicting attentional focus, nor between affective forecasting accuracy and emotional intelligence in predicting coping behaviors (all  $ps > .05$ ).

## DISCUSSION

This study was a preliminary, empirical investigation of how discrepancies between expected versus experienced affect influence routine task-related behavior. Further, this study also explored for whom and through which mechanisms such effects may occur. Hypotheses were made about general positive and negative affect, but as discussed below, significant findings were mostly yielded through exploratory analyses of discrete emotions.

Regarding the accuracy of forecasts, predicted and experienced positive and negative affect were overall moderately to strongly correlated, suggesting that the intensity of the affect people anticipate feeling is closely related to their felt experience in this performance context. Further supporting this notion, the absolute value of the magnitude of the discrepancy between experienced and anticipated affect ranged from .03 to 1.70 for positive affect and from .03 to 1.67 for negative affect. Thus, respondents' predictions of general affect were never more than 2 scale points off, and were equally inaccurate for positive and negative affect.

Taken together, these findings would seem to suggest that people are relatively accurate in predicting their feelings surrounding routine task behavior. However, the accuracy observed among these participants could in part be a function of the type of routine task engaged in here (i.e., studying for an upcoming exam). Plausibly, relatively less accuracy would be observed in relation to a different type of routine task or work event. For example, interpersonal tasks such as attending a meeting or providing

feedback to a junior employee may be subject to less accuracy due to the uncertainty and ambiguity that can accompany such interpersonal tasks.

Accuracy may also depend on the temporal distance between the time the forecast is made and when the affect being forecasted is ultimately experienced. According to construal-level theory (Trope & Liberman, 2010), people's judgments about upcoming events (or objects) are influenced by the proximity of events under consideration. More proximal events are construed on a relatively concrete level, whereas more distal events are construed on a relatively abstract level. Thus, thinking about studying from a psychologically distal perspective should involve general representation (e.g., the library, books) whereas thinking about studying from a more proximal perspective should be more detail-oriented (e.g., reading through Chapter 4, asking my friend Charlie for his class notes). In this study, participants made forecasts one week prior to their upcoming exam and were relatively accurate, but it is possible that forecasts made farther in advance perhaps would have been less accurate.

Prediction accuracy also seemed to be partially be a function of whether the affect referent was broad<sup>5</sup> (as with positive and negative affect) versus specific (as with discrete emotions) – with more accurate predictions surrounding discrete emotions. Specifically, compared to general affect, many more people made accurate predictions about discrete emotions (between approximately 20-58% depending on the specific emotion) versus general affect (about 2% for PA and 7% for NA). Borrowing again from construal-level

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<sup>5</sup> Participants did not explicitly make predictions about general PA and NA; rather, predictions were made about the specific emotions (the 20 assessed by the PANAS) and general positive and negative affect composites calculated from the relevant items.

theory, this may be because evaluation of specific objects (here, discrete emotions) requires less abstract mental representation compared to more broad or inclusive ones, such as positive and negative affect. That is, it is likely far easier to picture (and make predictions about) how “nervous” one will feel while studying for an exam versus imagining how “bad” one will feel. This notion has implications for affect-as-information theory (Schwarz & Clore, 1988) which was drawn from to make hypotheses for this study. According to affect-as-information theory, affect serves as informational input that influences cognitive processing, which in turn influences behavior. Applied to affect discrepancies, a discrepancy between anticipated and experienced positive emotions may be more interpretable and meaningful than a discrepancy between anticipated and experienced positive affect. Thus, the impact that inaccuracy has on behavior may not only be a function of the type of affective inaccuracy (i.e., over versus underprediction), but also a function of whether affect is interpretable in a more general versus specific sense.

It is also possible that less accuracy was observed in relation to general affect because it encompasses a wide range of specific emotions, some of which are less relevant to the present context of studying. For such emotions, people should generally know what (not) to expect; thus, greater accuracy should be observed for such emotions. Indeed, as seen in Table 2, the largest percentage of people were 100% accurate about the extent to which they would feel ashamed, hostile, and guilty (58%, 50%, and 49%, respectively) compared to other emotions. Such negative, interpersonally-oriented emotions are, arguably, less relevant to studying.

Two other goals of this research study were to better understand the mechanisms through which mispredictions about future affective experiences impact task performance and the role individual differences play in accounting for the influence of affective forecasting errors on behavior. Specifically, it was proposed that the relationship between conscientiousness or emotional intelligence and attentional focus or problem-focused coping would depend on affective forecasting accuracy. Although results were inconsistent with the nature of the hypothesized interactions, several significant interactions between individual differences and inaccuracy emerged.

First, as seen in Figure 2, less conscientious individuals indicated lower levels of attentional focus when overpredicting – versus underpredicting - general PA. In contrast, highly conscientious individuals exhibit the same levels of attentional focus irrespective of whether they had over- versus underpredicted positive affect. Further, less conscientious individuals showed levels of attentional focus equal to that experienced by highly conscientious individuals when underpredicting positive affect. Thus, with respect to positive affect, less conscientious individuals seem to benefit from feeling better than anticipated, perhaps because the unexpected positive feelings provide them with motivation needed to focus on the task – motivation that highly conscientious individuals may possess intrinsically. Notably, this relationship was only observed among the most acutely inaccurate overpredictors of positive affect (i.e., those for whom anticipated affect exceeded experienced affect by 1 scale point or greater).

The effect observed for positive affect seems to have been driven by three specific positive emotions: active, alert, and attentive. For active, the same pattern for positive

affect described above was observed (see Figure 3). A similar, but slightly different pattern was observed among those who had over- versus underpredicted alertness and attentiveness (see Figures 4-5). As with general positive affect and active, less conscientious individuals showed greater levels of attentional focus when underpredicting the intensity of emotional experiences. However, the opposite pattern was observed among highly conscientious individuals: overpredictors showed slightly greater focus compared to underpredictors. Taken together, this pattern of results seems to suggest that less conscientious individuals benefit from feeling greater intensity of positive affect than anticipated, but whether highly conscientious individuals are more focused depends on the particular emotion. For general positive affect and active, highly conscientious individuals show equal levels of focus when over- (versus under-) predicting, and higher levels of focus when over- (versus under-) predicting alertness and attentiveness. One possibility is that, when feeling unexpectedly less alert and attentive, highly conscientious individuals react by focusing more time and effort on the task, believing their feelings to be an indicator of inadequate progress. Thus, highly conscientious individuals may be more motivated by concerns about adequate effort, whereas less conscientious may be more driven by perceptions of task enjoyment. However, as noted above, the results did not indicate that either perceptions of task progress or enjoyment mediated the relationships between inaccuracy and task-related behavior.

Third, affective forecasting accuracy did not moderate the relationship between emotional intelligence and problem-focused coping except when individuals inaccurately

predicted how active they would feel while completing the task (and this effect was no longer significant after controlling for trait positive affect). Thus, on the whole, these results do not provide strong support for the hypothesis that individuals who score high on emotional management respond to so-called “negative” affective discrepancies using relatively more active coping mechanisms compared to their less emotionally intelligent peers.

A few additional findings are worthy of comment. First, affective forecasting inaccuracy moderated the relationship between individual differences and task-related behavior only for *positive* affect and emotions. It would therefore seem that discrepancies between anticipated and experienced positive affect have more of a bearing on routine task performance compared to discrepancies surrounding negative affect. Taken together, these findings imply that efforts to improve individual level performance through modification of the task itself (through, for example, job crafting; Berg, Wrzesniewski, & Dutton, 2010), should focus on promoting positive reactions to task work (such as making the task more fun, engaging, and meaningful) rather than simply focusing on reducing negative responses.

Second, it is noteworthy that, of the ten positive emotions<sup>6</sup> assessed in this study, significant findings emerged around being active, alert, and attentive, specifically. Beyond being most relevant to the present context of studying (compared to, for example, being enthusiastic), it may be that, consistent with studies utilizing emotion item sets, these emotions are conceptually distinct from the others. For example, Egloff and

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<sup>6</sup> Interested, alert, excited, strong, inspired, determined, attentive, enthusiastic, proud, and active.

colleagues (2003) empirically distinguished the positive emotions assessed by the PANAS into three clusters, one of which was labeled “activation” and included active, alert, and attentive. Thus, perhaps predictions about anticipated emotions matter most for behavior (at least in this context) when the emotional experience captures activation-related phenomenon.

Finally, trait positive and negative affect (here, how respondents “typically felt”) were strongly associated with anticipated positive and negative (state) affect, respectively. Thus, positive or negative affective disposition may predispose individuals, not only to more positive or negative felt emotional experiences (respectively), but also to making more positive or negative predictions of emotional experiences. This observation may help to explain why the moderation analyses were no longer significant after controlling for trait affect.

### **Limitations**

This study has limitations worth noting. First, affect was self-reported using a standard paper-and-pencil measure, and discrete emotions were measured using a single item. Although this approach has considerable precedent in the affect literature (Larsen & Fredrickson, 1999), future studies might consider using multiple-item measures and/or using technology-mediated emotion assessment (e.g., smartphone applications). Moreover, this study involved a student sample and performance of an academic task (i.e., studying for an upcoming exam). Results may therefore not be generalizable to other types of routine tasks and/or those conducted within organizational contexts. As mentioned above, future research should investigate accuracy in relation to other types of

routine work tasks and examine how adjustments in temporal distance between the time of the forecast and assessment of experienced affect may influence accuracy and subsequent performance. Likewise, this study investigated two individual difference variables, yet other unexamined individual differences in ability (e.g., mindfulness) and personality (e.g., neuroticism) could theoretically influence both the accuracy of forecasts and subsequent task performance. Lastly, by their nature, some of the analyses (e.g., the exploratory analyses comparing accurate respondents to over- or underpredictors of positive affect and negative affect) necessitated use of a subset of the total sample. Thus, such analyses may not have been sufficiently powered to produce significant findings.

Despite these limitations, the current study represented a preliminary, empirical investigation of how discrepancies between anticipated versus experienced affect influence task-related behavior. Unlike previous work, this study examined how inaccuracy translates into behavior – versus hypothetical choices. Further, the present study filled a conceptual gap through examination of how accuracy influenced effortful behavior in a relatively *routine* performance context. An appreciable amount of support was found for one of the proposed explanatory mechanisms (i.e., attentional focus) through which effects were hypothesized to occur and for one of the individual difference variables (i.e., conscientiousness) thought to moderate these effects. This study hopefully will serve to facilitate the development of future theory and research on the topic.

## APPENDIX

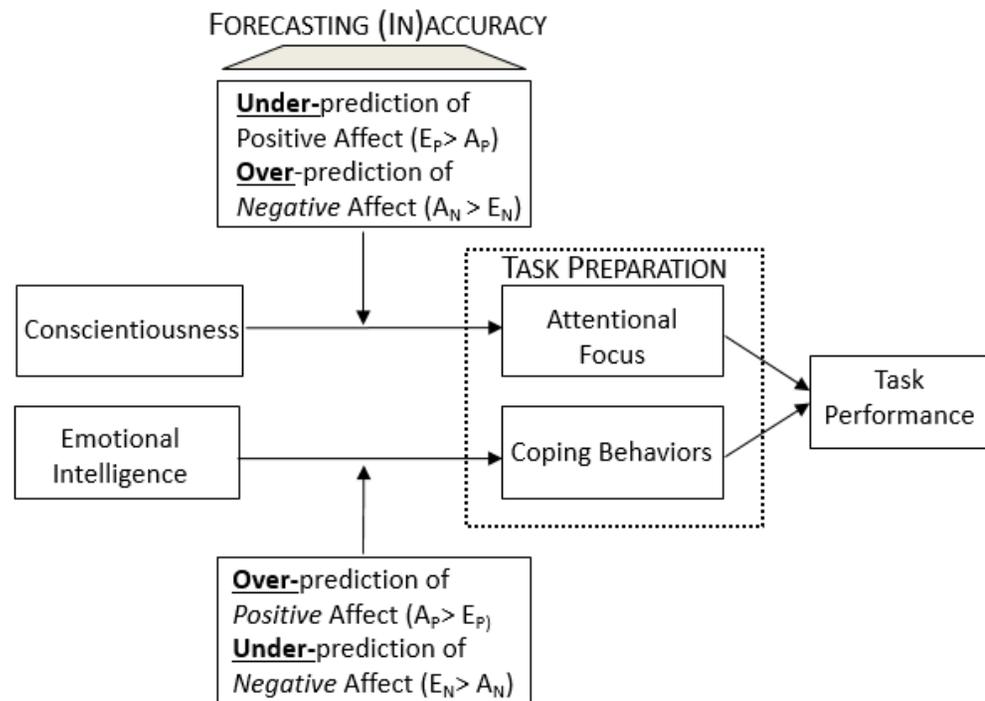


Figure 1. The Hypothesized Model.  $E_{P/N}$  = Experienced Positive/Negative Affect;  $A_{P/N}$  = Anticipated Positive/Negative Affect.

Table 10

*Means, Standard Deviations, and Intercorrelations Among Study Variables*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Anticipated Pos. Affect	2.68	.72	--																	
2. Experienced Pos. Affect	2.71	.67	.64**	--																
3. Trait Pos. Affect	3.36	.71	.46**	.25**	--															
4. Anticipated Neg. Affect	2.31	.78	.18	.15	.19*	--														
5. Experienced Neg. Affect	2.26	.74	.18	.18	.10	.70**	--													
6. Trait Neg. Affect	1.84	.68	.21*	.22*	.01	.62**	.61**	--												
7. Attentional Focus	3.22	.69	.32**	.58**	.15	-.06	-.12	-.10	--											
8. Coping (Pham & Taylor)	3.65	.55	.21*	.20*	.22*	-.12	-.20*	-.17	.44**	--										
9. Coping (SCOPE)	3.74	.71	.13	.42*	.18	.02	-.03	.03	.32**	.37**	--									
10. Task Enjoyment	2.44	.94	.47**	.63**	.21*	.03	-.08	.11	.44**	.16	.34**	--								
11. Goal Progress	3.75	.63	.19*	.35**	.04	-.16	-.41*	-.19	.59**	.60**	.36**	.39**	--							
12. Task Perf.- Current	85.11	11.49	.06	.13	-.01	-.05	-.12	.10	.23*	.07	.11	.17	.19	--						
13. Task Perf. - Prev.	84.19	13.97	.16	.07	.02	-.08	-.12	-.01	.24*	.25*	-.06	.12	.23	.64**	--					
14. EI - Mgmt.	11.05	3.28	-.26**	-.24**	.05	-.32**	-.34**	.30**	-.05	.12	.13	-.21	.05	.10	.19	--				
15. Conscientiousness	3.75	.62	.03	-.15	.34**	-.32**	-.36**	-.41**	.15	.27**	.06	-.11	.18	-.07	.06	.35**	--			
16. No. Credits	14.37	2.62	-.25**	-.28**	-.11	.02	.01	-.11	-.11	.07	.09	-.28**	.04	-.08	-.14	-.03	.09	--		
17. Hrs. Worked	11.19	12.45	-.02	-.01	.01	-.16	-.14	-.13	-.10	-.11	-.08	-.17	-.14	-.08	-.11	.23*	.09	-.22*	--	
18. GPA	3.42	.41	-.09	-.06	.04	-.27**	-.24*	-.10	.01	.18	-.04	.09	.14	.38**	.31**	.16	.19	-.19	.09	--
19. SAT	1221	200.05	-.06	-.06	.10	-.08	-.24*	-.03	.05	.05	-.14	.01	.22*	.20	.22	.05	.09	-.14	.10	.21

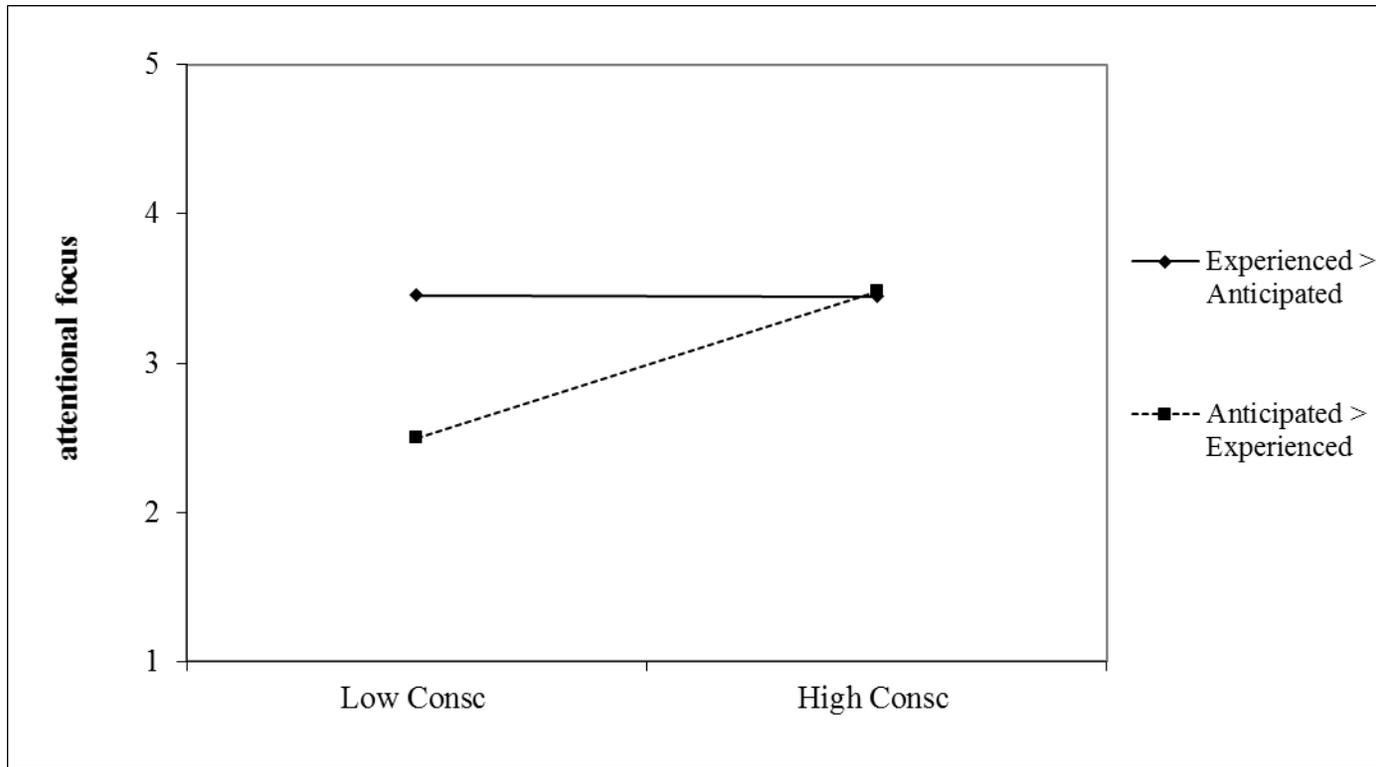
*Note.* N = 104. Coping (Pham & Taylor) = problem-focused coping as assessed by three items adapted from a measured developed by Pham and Taylor (1999). Coping (SCOPE) = problem-focused coping as assessed by the problem-focused coping scales of the Student Coping Instrument (SCOPE; Struthers, Perry, & Menec, 2000). Task Perf. - Current = self-reported performance on the current exam. Task Perf. - Prev. = self-reported performance on an exam occurring previously that semester. EI - Mgmt. = Emotional Intelligence-Management. No. Credits = Number of credits being taken that semester. Hrs. Worked = Hours worked in a paid job outside of classes. GPA = Cumulative Grade Point Average. \* p <.05, \*\* p <.01.

Table 2

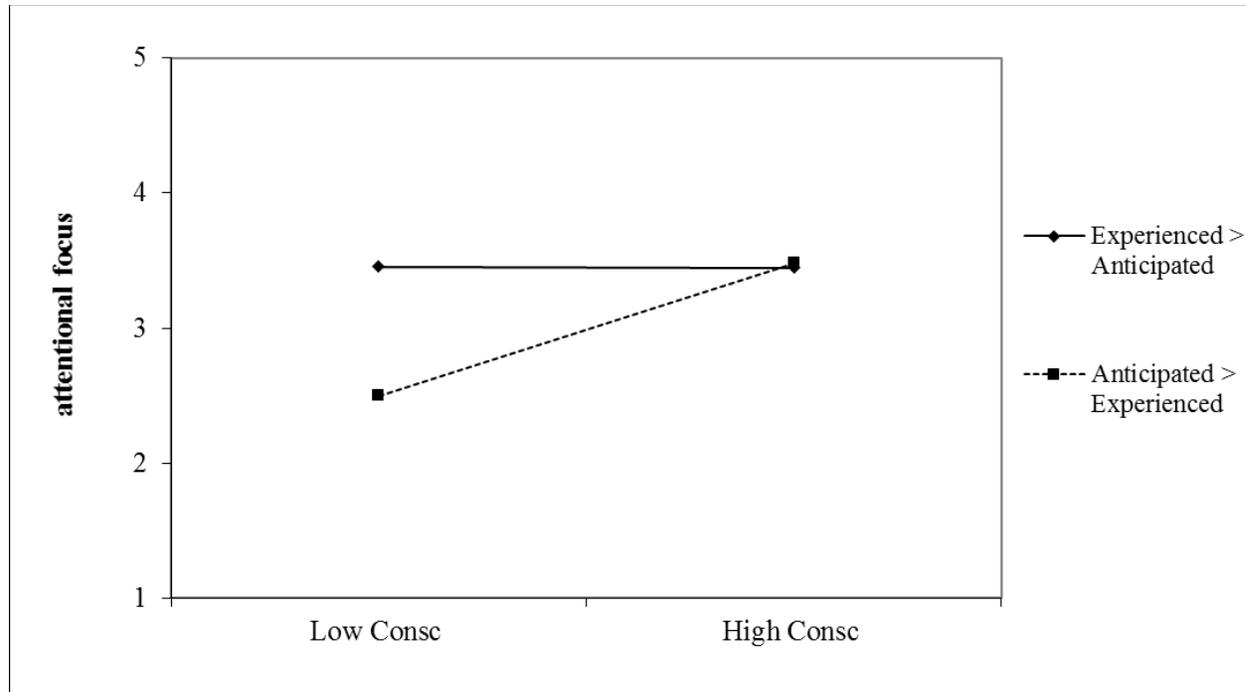
*Frequency and Magnitude of Affective Forecasting (In-)Accuracy*

	Overpredicted			Underpredicted			Accurate
	Any Magnitude	Range	> 1 Scale Point	Any Magnitude	Range	> 1 Scale Point	
PA	48	.03-1.65	8	54	.05-1.70	6	2
NA	50	.03-1.40	8	47	.03-1.67	6	7
Interested	37	.33-2.50	27	43	.25-3.00	22	24
Distressed	54	.33-2.67	40	29	.25-2.67	21	21
Excited	22	.25-2.00	14	58	.33-3.00	30	24
Upset	33	.25-3.00	24	35	.33-3.00	15	36
Strong	31	.25-2.00	17	41	.33-3.00	23	32
Guilty	22	.33-2.00	15	31	.25-2.33	14	51
Scared	38	.33-3.00	25	32	.17-4.00	15	34
Hostile	14	.50-3.00	12	38	.25-2.33	20	52
Enthusiastic	34	.25-3.67	20	45	.25-3.00	24	25
Proud	36	.33-3.00	24	40	.25-2.33	27	28
Irritable	43	.25-3.67	22	37	.33-2.25	13	24
Alert	42	.33-3.00	26	33	.33-3.00	18	29
Ashamed	19	.50-3.00	15	25	.33-2.33	9	60
Inspired	33	.25-3.00	19	44	.25-2.00	23	27
Nervous	48	.33-4.00	29	33	.33-2.67	20	23
Determined	43	.33-2.67	23	34	.25-3.00	20	27
Attentive	47	.25-2.33	26	35	.33-2.50	23	22
Jittery	51	.25-4.00	37	23	.33-3.00	10	30
Active	34	.33-3.67	24	38	.33-2.33	23	32
Afraid	44	.33-2.67	31	32	.33-2.67	16	28

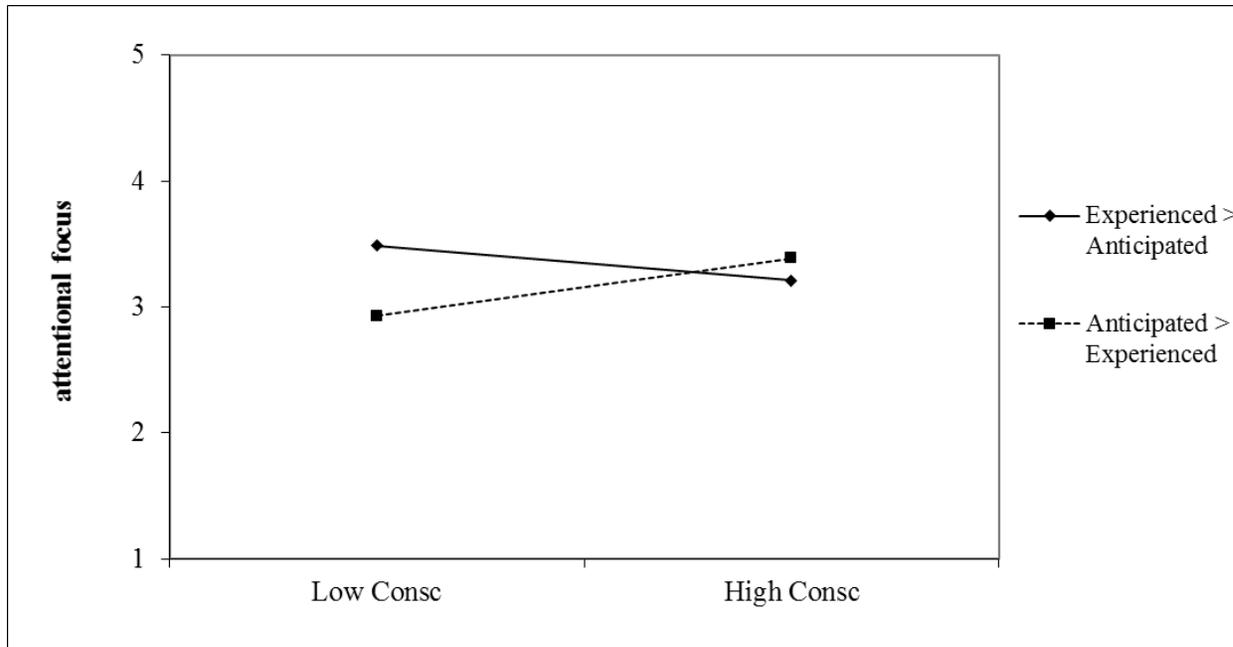
*Note.* "Any Magnitude" indicates the number of individuals who over- or underpredicted affect by any scale magnitude whereas ">1 Scale Point" reflects those who did so by 1 scale point or greater. "Range" represents the absolute value of the magnitude of the discrepancy between experienced and anticipated affect.



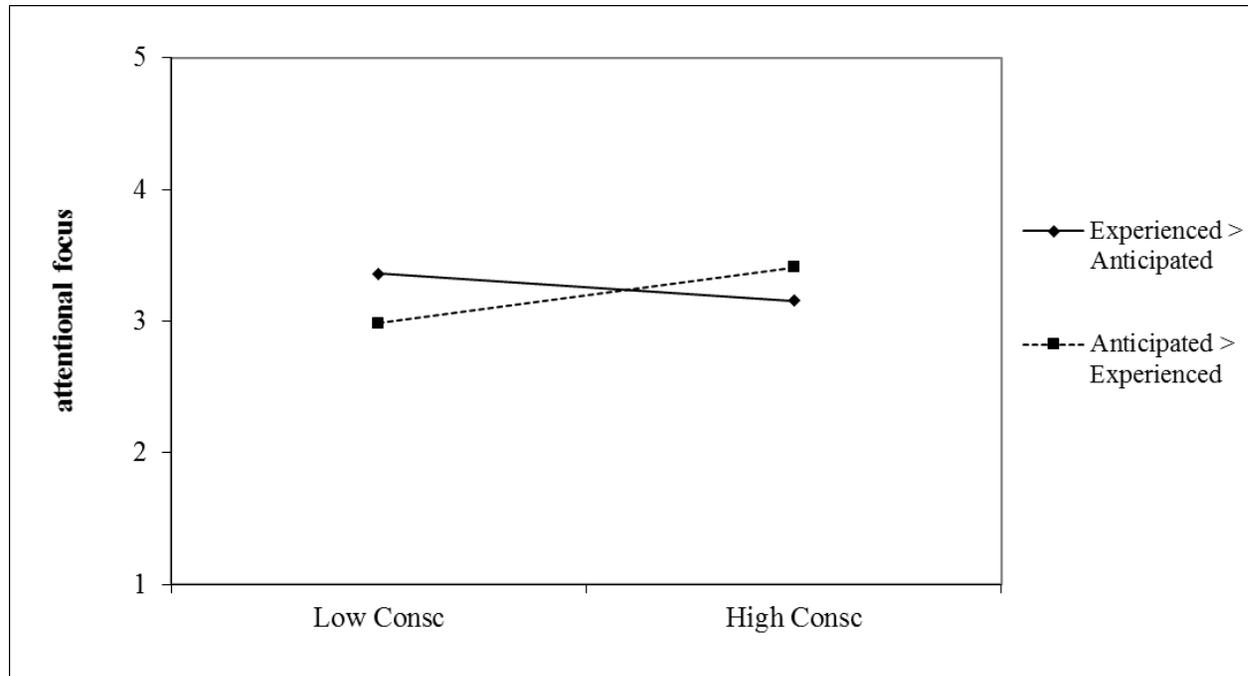
*Figure 2.* Moderating effect of over- versus under-predicting positive affect on the relationship between conscientiousness and attentional focus. Anticipated > experienced positive affect = overprediction; Experienced positive affect > anticipated positive affect = underprediction. Consc = conscientiousness. Results reflect results when overpredictors are considered to be those for whom anticipated affect exceeded experienced affect by 1 scale point or greater.



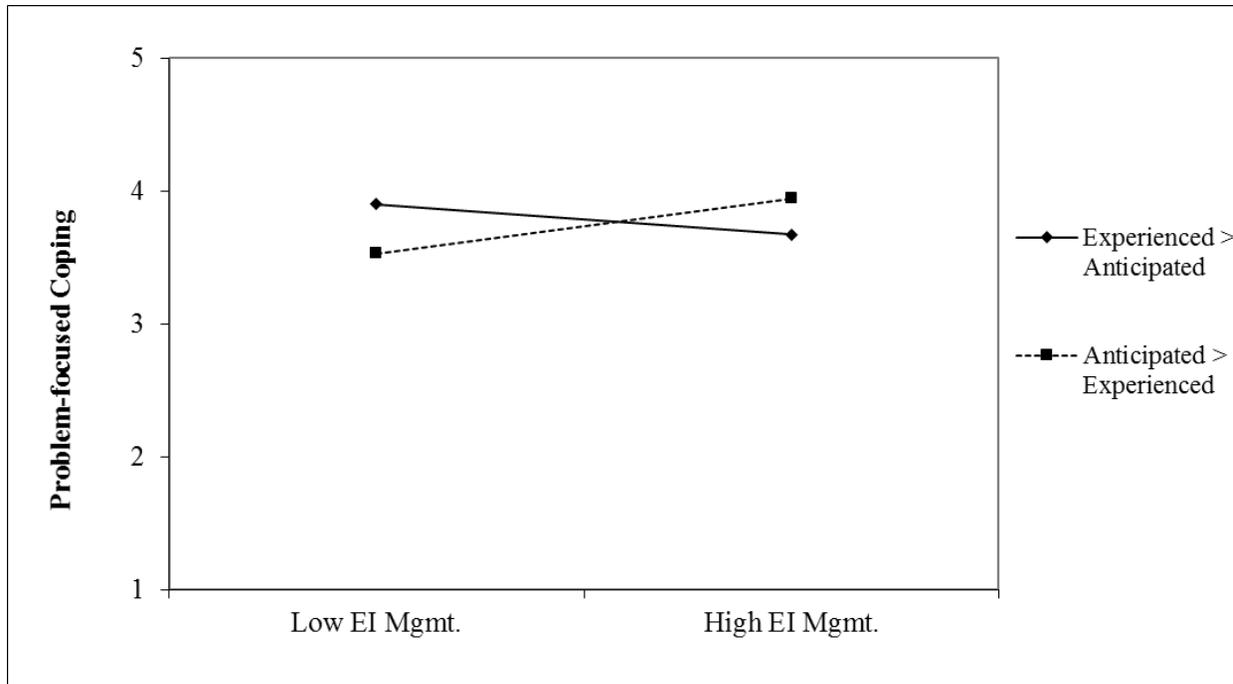
*Figure 3.* Moderating effect of over- versus under-predicting activity on the relationship between conscientiousness and attentional focus. Anticipated activity > experienced activity = overprediction; Experienced activity > anticipated activity = underprediction. Consc = conscientiousness.



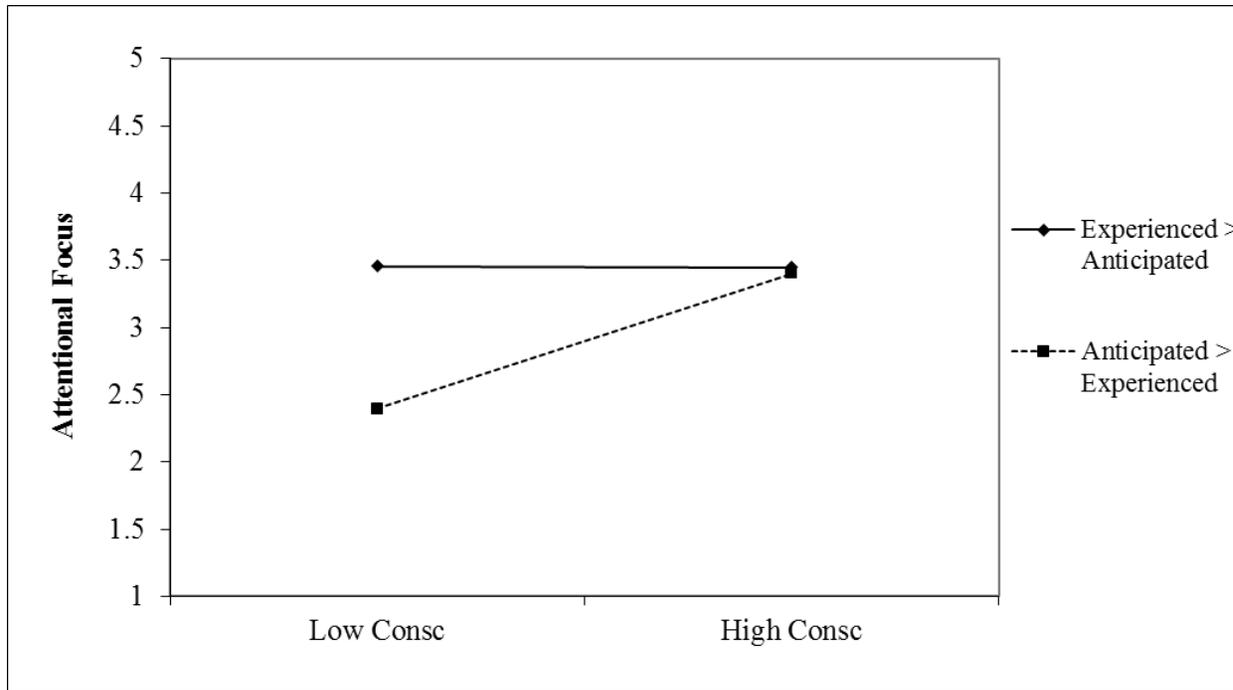
*Figure 4.* Moderating effect of over- versus under-predicting alertness on the relationship between conscientiousness and attentional focus. Anticipated alertness > experienced alertness = overprediction; Experienced alertness > anticipated alertness = underprediction. Consc = conscientiousness.



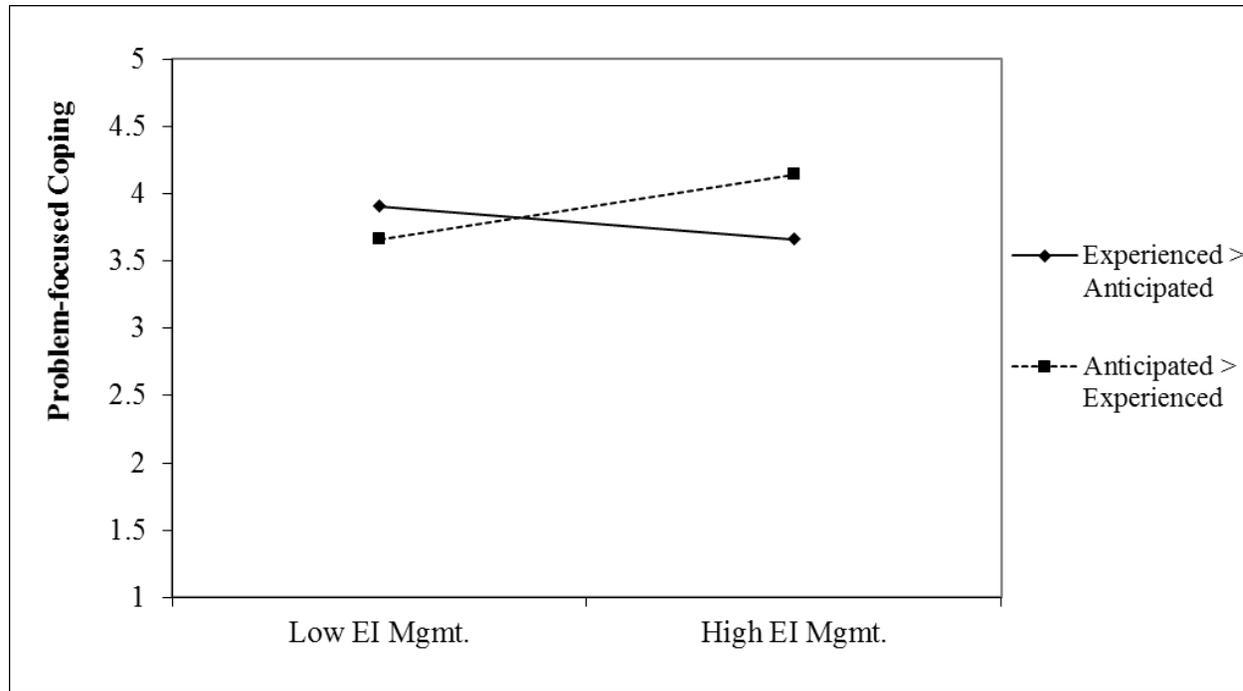
*Figure 5.* Moderating effect of over- versus under-predicting attentiveness on the relationship between conscientiousness and attentional focus. Anticipated attentiveness > experienced attentiveness = overprediction; Experienced attentiveness > anticipated attentiveness = underprediction. Consc = conscientiousness.



*Figure 6.* Moderating effect of over- versus under-predicting activity on the relationship between emotional intelligence-management and problem-focused coping. Anticipated activity > experienced activity = overprediction; Experienced activity > anticipated activity = underprediction. EI Mgmt. = Emotional Intelligence Management.



*Figure 7.* Moderating effect of over- versus under-predicting activity on the relationship between conscientiousness and attentional focus. Anticipated activity > experienced activity = overprediction; Experienced activity > anticipated activity = underprediction. Consc = conscientiousness. Results reflect results when overpredictors are considered to be those for whom anticipated activity exceeded experienced activity by 1 scale point or greater.



*Figure 8.* Moderating effect of over- versus under-predicting activity on the relationship between emotional intelligence-management and problem-focused coping. Anticipated activity > experienced activity = overprediction; Experienced activity > anticipated activity = underprediction. Consc = conscientiousness. Results reflect results when overpredictors are considered to be those for whom anticipated activity exceeded experienced activity by 1 scale point or greater.

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## **BIOGRAPHY**

Carolyn Jeanine Winslow received her Bachelor of Arts from the University of Pennsylvania in 2011, and her Master of Arts from George Mason University in 2014. Throughout graduate school, her research focused on understanding strategies for enhancing employee emotions and psychological well-being, with a specific interest in discrete emotions and the efficacy of positive workplace interventions.